

# MASTERARBEIT

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„Internationalization of Global Born Companies  
-Challenges and Opportunities-  
Qidenus Technologies GmbH“

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*Acești oameni puțini care ne fac pe fiecare în parte să nu regretăm că suntem, reprezintă, chit că o știm sau nu, stratul de protecție care ne ajută să trecem prin viață. Fiecare om face față la ce i se întâmplă pentru că este protejat în felul acesta. Fără acest zid de ființe iubite care ne înconjoară noi nu am fi buni de nimic.*

*(Gabriel Liiceanu "Declaratie de iubire")*

***Pentru Părinții și Bunicii mei dragi***  
***For My Dear Parents and Grandparents***  
***And***  
***For Milo***

*Mulțumesc! Thank you!*

## Table of Contents

Introduction .....	5
1. Internationalization theories .....	6
2. Definitions of the Global Born Companies .....	9
3.Theoretical Framework .....	15
4. Company Profile.....	18
4.1 History and technology.....	18
4.2 Product Porfolio.....	20
4.3 Company Analysis through the SWOT diagram.....	24
4.4 Market Analysis.....	28
4.5 Competition Analysis .....	37
4.6 The Marketing Mix.....	41
4.6.1 The Product.....	41
4.6.2 The Price.....	45
4.6.3 The Promotion .....	46
4.6.4 The Place .....	50
4.6.5 The Positioning.....	51
4.7 Qidenus Technologies: Challenges and Opportunities in the Internationalization Process .....	52
Comparison between Western Europe, South-Eastern Europe, Middle East, Asia Pacific Region, South America and North America.....	52
4.7.1 Political factors .....	53
4.7.2 Economic factors .....	58
4.7.3 Technological factors .....	66
4.7.4 Socio-Cultural and Demographic Factors .....	71
4.7.4.1 High and Low context Cultures.....	76

4.7.4.2 The Hofstede Cultural Dimensions .....	80
Conclusion .....	89
Bibliography .....	92

## **Tables and Figures**

Figure 1: Internationalization Theories .....	6
Figure 2: Qidenus' Initial Product Portfolio.....	19
Figure 3: Digitization Growth Factor .....	20
Figure 4: 2008 Model 1 Qidenus Robotic Book Scanner .....	21
Figure 5: 2010 Model 2 Qidenus Robotic Book Scanner .....	22
Figure 6: 2012 Model 3 Qidenus Robotic Book Scanner 3.0.....	22
Figure 7: Mastered Book Scan System 3.0 .....	23
Figure 8: Smart Book Scan System 3.0 .....	24
Figure 9: SWOT Analysis .....	25
Figure 10: The breakdown vs. Build-up method.....	29
Table 1: Market Robotic Book Scan System.....	30
Table 2: Market Mastered Book Scan System .....	31
Figure 11: Segmentation of the Customers of Qidenus Technologies .....	33
Table 3: Total Number of Customers of Qidenus Technologies.....	33
Figure 12: Potential Market for the new Smart Book Scan System.....	34
Table 4: Total Number of Potential Customers for the Smart Book Scan System .....	34
Figure 13: Comparison between the Markets for Robotic& Mastered and the Smart Systems.....	35
Figure 14: Qidenus Worldwide Partners .....	36
Figure 15: Political Instability Index in 2009-2010.....	55
Figure 16: GDP Per Capita July 2013 .....	58

Figure 17: GDP Annual Growth in Percentages .....	60
Table 5: Fluctuation of exchange rates (the data from 2013 and 2014 is forecasted).....	63
Figure 18: Public spending on Education as % of GDP.....	64
Table 6: Statistical Data for Libraries Worldwide.....	65
Figure 19: Households with a Computer .....	67
Figure 20: Household with Internet access at home.....	68
Figure 21: Individuals Using the Internet.....	69
Figure 22: Percentage of Individuals Using the Internet.....	70
Figure 23: Primary completion rate, total (% of relevant age group).....	72
Figure 24: University Completion Rate.....	73
Figure 25: Adult literacy rate in percentages 2010.....	74
Figure 26: Religions all around the World in Percentages .....	75
Figure 27: High and Low Context Cultures .....	76
Figure 28: Hofstede’s Cultural Dimensions – Country Scores .....	81

## **Appendices**

Appendix 1: Summary of Master Thesis in German.....	99
Appendix 2: Curriculum Vitae Andreea Raluca Stoica.....	102
Appendix 3: Technical Specification Sheet Qidenus Robotic Book Scan 3.0 .....	106
Appendix 4: Technical Specification Sheet Qidenus Mastered Book Scan 3.0.....	108
Appendix 5: Technical Specification Sheet Qidenus Smart Book Scan 3.0 .....	110
Appendix 6: Qidenus Technologies Reference List.....	112
Appendix 7: Qidenus Technologies Unique Technology Features .....	113
Appendix 8: Case Study Arcanum Hungary .....	114
Appendix 9: Case Study Sivan Soluciones Mexico .....	116

Appendix 10: Case Study University Library of Heidelberg .....	118
Appendix 11: Article about Qidenus in the Wired Magazine UK .....	119
Appendix 12: Article about Qidenus in „Der Standard“ .....	120

## Introduction

The internationalization process of Global Born Companies has been the subject of significant research over the last decade. Their vision and development strategies have challenged the existing internationalization theories leading to a separate analysis of their characteristics and internationalization basis.

In order to contribute to this research I have decided to analyze in my paper the internationalization strategies, implicitly the opportunities and obstacles faced by the Austrian book scanner manufacturer Qidenus Technologies GmbH on its way to conquering the world market. The study covers the theoretical background of the existing internationalization theories and the unique features of the global born companies significantly influencing their international path.

After having synthesized the theoretical literature basis, a clear company profile of Qidenus Technologies is provided. The profile includes a short history, an overview of the technological developments and a product presentation. To obtain a vast positioning perspective on the market, a Strengths-Weaknesses-Opportunities-Threats analysis of the company is established and correlated with a market and competition analysis. The present status and strategies of Qidenus Technologies are illustrated through the elaboration of the marketing mix consisting of product, price, promotion, place and positioning approach methods related to the firm's international perspective.

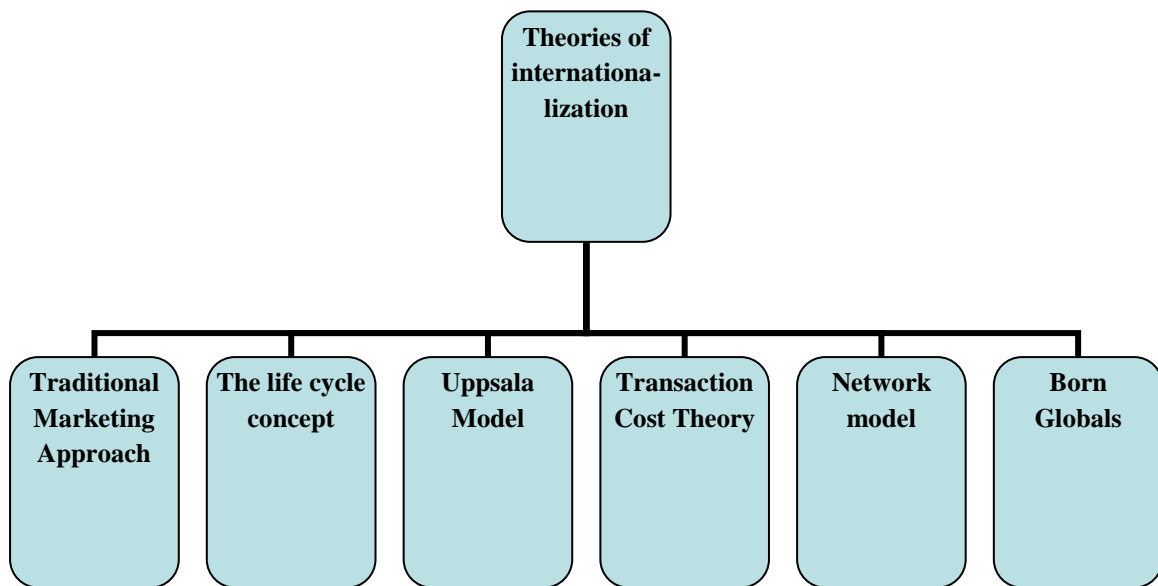
As a representative of global born companies, Qidenus Technologies has been performing international activities since its birth, therefore facing a variety of challenges due to the different political, economical, socio-cultural and demographical influence factors worldwide. These factors are identified and thoroughly integrated in the company's marketing and development strategies. A comparison between the international development in Western Europe, South-Eastern Europe, Middle East, Asia Pacific Region, South America and North America is performed in order to offer a broader perspective upon the relevant factors which play an important role in the current world market position of Qidenus Technologies and in order to identify the best solutions for the short and long term successful internationalization process.



# 1. Internationalization theories

The economic development led along the years also to the appearance of different internationalization theories. During the last two decades the internationalization focus moved from just customers to also other important players in the economic network.

*Figure 1: Internationalization Theories*



*Source: Created by Andreea Stoica based on the theoretical background of Hollensen 2005, pp. 49-90*

The traditional marketing approach developed by Penrose in 1959 [Penrose 1959] and Hamel and Prahalad in 1990 [Prahalad and Hamel 1990, pp.79-90] underlines the necessity to concentrate on the firm's core competences and to identify opportunities in the foreign environment. (cp. [Hollensen 2005, p 72])

The life cycle concept for international trade relies on Vernon's product life cycle hypothesis (cp. [Vernon 1966, pp.190-207]), stating a gradual evolution of the internationalization process starting with exporting and than slowly moving to foreign

direct investment. According to Vernon the companies from advanced countries are closer to the markets, therefore the first plants will be established in advanced countries while with the increase in demand and importance of achieving economies of scale the production will be moved to developing countries.(cp.[Hollensen 2005, p. 72])

The Uppsala internationalization model has been developed in 1970s by the Swedish researchers Johanson, Wiedersheim and Vahlne. They focused in their analysis on the internationalization pattern of Swedish manufacturing firms. They distinguished that firms increased their market commitment and involvement along with their growing market experience.(cp [Johanson and Vahlne 1977, pp.23-32])

This fact can be illustrated in the four internationalization stages they have identified called the „*establishment chain*” [Johanson and Wiedersheim Paul 1975, p.307]

- Stage 1: no regular export activities
- Stage 2: export via representatives
- Stage 3: founding of foreign sales subsidiary
- Stage 4: opening of manufacturing facilities

Another factor which the Uppsala model is taking into consideration is the psychic distance. The model states that companies tend to enter at first countries with a low level of psychic distance compared to their own and then gradually approach companies with greater psychic distance. The psychic distance is composed of variables such as socio-cultural, economic, political factors. Distortions in the successful development of the internationalization process might be caused if the differences between these variables in the home country of the company and the foreign countries are highly significant. (cp.[Hollensen 2005, p. 74])

The Uppsala model has been characterized by many experts as too deterministic due to the disregard of the increasing world homogeneity and by its limitations in conveying explanations related to the firms that do not follow the gradual internationalization steps as proved by other researchers. (cp.[Bloodgood et al. 1996, p.73] ) Companies nowadays have more diversified ways of gaining market knowledge, without having the need to

gradually do it internally, due to universities and management trainings worldwide focused on international business strategies and access to human resources with foreign expertise. (cp.[Hollensen 2005, p.78]) Moreover the development of information technologies has facilitated the process of getting familiarized at a faster rate with foreign countries as potential targets of the internationalizing strategy.

The transaction cost theory relies on the assumption that there is no perfect competition, due to the “friction” between buyer and seller as a consequence of opportunistic behavior. Therefore a cost minimization of the transactions would be the most beneficial path for the company left with the choice to decide according to the costs whether to internalize by integrating vertically or not. (cp.[Hollensen 2005, p.78])

The transaction costs theory has been enlarged and developed by Furubotn and Richter 1998.(cp.[Furubotn and Richter 1998, p. 556]) They move away from the assumption of a perfectly rational decision maker, and regard the transaction as being made between imperfect economic agents. They broaden the perspective of transaction including activities such as transfer of knowledge or information related to research and development and developed the simple classification into ex-ante and ex-post costs by integrating the market, managerial and political fixed and variable costs. (cp.[ Zylbersztajn 2003, p.3])

Although the transaction cost theory provides a broad perspective upon the cost distribution and the relevant decision taking in according to the cost structure, it lacks to consider some important aspects. First of all, experts argue that the transaction cost theory completely disregards the internal transaction costs within a company, fact which does not correspond with the realities of the relationship between for example a firm and its subsidiaries.(cp.[ Hollensen 2005, p.78])

Another important argument given by Williamson who completes the transaction cost theory is that the transaction cost is over evaluated and the production cost is under evaluated, therefore he proposes that the most efficient internationalization strategy would consider minimizing the sum of production and transaction costs.(cp.[Williamson 1979, pp. 233-261])

Later on in a discussion paper Williamson underlined the following unique features of transaction cost economics: (cp.[Williamson 2007, p.17])

- Focus on concrete phenomena where the vertical integration (the make-or-buy decision) is the central analysis point
- The transaction is positioned as the basic analysis unit and is split in various dimensions such as asset specificity, contractual uncertainties etc.
- Clear empirical foundation of the theory

The network model differs fundamentally from other theories because it considers the fact that in a business network the different companies are connected through the interdependence. The network approach provides a relevant overview of the internationalization process of firms, especially for small firms highly dependent on the relationship with other companies (cp.[Axelsson and Johanson 1992, pp.218-234]).

## **2. Definitions of the Global Born Companies**

In the last decades a new concept and company type has emerged: the born global companies.

This type of companies differentiates from other firms through their immediate internationalization. They do not follow the traditional gradual internationalization steps but target the world from their very beginning. The “Born Global” was introduced in the business literature by McKinsey &Co in 1993. They analyzed a group of Australian firms who were producing high value products and exported just two years after founding. [Persinger 2007, p.74]

The research of global born companies mainly relies on the development of a business to serve customers in a global niche. Generally born global firms are small, having less than 500 employees and their annual sales are under 1 million Dollars and have export generally at least 25% of their production. Analyzed global born companies relied on a highly

advanced technology achieved through process or product innovation. [Persinger 2007, p.74]

Although at first just manufacturing firms were included in the category “global born companies”, in time a large number of non manufacturing firms started to be considered global as well.(cp. [Oviatt and McDougall 1994, p.45-64])

„*A true born global firm is a new venture that acts to satisfy a global niche from day one*”. [McPhee and Bailetti 2012, p.5] This definition is similar to the explanation of global born firms provided by Moen, Sorheim and Erikson in 2008.[Moen, Sorheim and Erikson 2008, pp.536-549] Their approach perceives new ventures as „*international by design and not by emergence*” and therefore excludes companies which internationalized after having been active on the home market, thoroughly highlighting that the analysis unit is just the start up born global.(cp. [McPhee and Bailetti 2012, p.5] )

The investment in concrete projects meant to lead to a successful sales program in various countries, starting from the company’s inception is what distinguishes born globals from other companies. Further on, this factor evolves into two concrete performance measurements such as time to cash from exports and percentage of sales in multiple countries. Already at the age of three born globals achieve more than 25% of their revenue from exports, demonstrating a much faster growing rate than other companies.(cp. [McPhee and Bailetti 2012, pp.5-6] )

Studies have shown that the global born companies all over the world have the following common characteristics:

- Local market situation(cp.[Canone, Constantino, Pisoni, Onetti 2012, p.6]): the limited market size and potential of local markets, as well as the saturation of the home market might be one of the most important internationalization drivers for global born companies (cp.[Freeman and Cavusgil 2007,pp. 1-40 ; Ibeh 2003, pp.124-141 ;Jolly et al.1992,pp. 71-82; Madsen and Servais 1997, pp.561-583])

- Encouragement through globalization of the world through free trade agreements, diminishing of tariffs and market entry barriers(cp. [Laanti et al 2007,pp.1104-1117]), as well as development of telecommunication networks and world wide web
- Targeting international markets from the founding: the decision to internationalize is based most of the times on nature of the firm, the developed technology and the degree of scarcity and specialization in their respective field
- Reliable and constant network development(cp. [Canone, Constantino, Pisoni, Onetti 2012, pp.2-27, Chetty and Campbell-Hunt 2004,pp.57-81]): due to their limited resources, global born companies have to invest in constructing a strategic network of partners which can assist them and provide them with complementary capabilities and know how
- High flexibility level and permanent building of know how: the global born companies are characterized by a large degree of flexibility and adaptation.(cp. [Knight and Cavusgil 2004, pp.124-141]) Employees are usually performing various tasks from different fields, because in comparison to multinational companies specialization is to be found almost just in technical or engineering departments
- Corporate culture: one of the distinguishing features of global born companies is their global culture defined through: sensitivity towards other national cultures and willingness to perceive and understand their necessities, cultural awareness of other cultures, work timings adjusted to the project requirements
- Differentiation strategies as a competitive advantage: Born global companies mainly focus on developing unique products for niche markets. Their goal is attracting customers and trying to create a base of loyal customers by adjusting to their specific needs. Due to the constantly increasing demand for customized products niche markets are presenting global born companies with a high degree of development potential (cp.[Cavusgil and Knight 2004, pp.124-141])
- Human resources: Global born companies usually rely on employees from all over the world, fact which facilitates the elimination of cultural distance with the targeted markets and leads to a faster internationalization process
- Information Technology and Communication: Global Born Companies have to invest in high level communication systems, since their partners are distributed all over the world and the quality of communication and data transmission has a major influence on the development of their further business relations

- Entrepreneurial visionaries: the managers of global born companies see the world as a large market without barriers and therefore encourage a fast internationalization path. (cp.[Wictor and Andersson, pp.13-25]) They are characterized by a high level of innovativeness, creativity, knowledge and risk taking (cp.[McDougal and Oviatt 2000, pp.902-906])
- Reliance on cutting edge technology(cp.[Australian and New Zealand Academy of Management, 23<sup>rd</sup> Annual Australian and New Zealand Academy of Management Conference 2009,pp.1-22]): The majority of global born companies are among the technological leaders of their specific industry, thus creating and offering products or services at a higher quality level than their competitors.(cp.[Knight &Cavusgil 1996,pp.11-26])
- Distribution channels: Global borns need a large, qualitative network base in order to successfully market their products all around the world, since they lack the resources to do it directly. Therefore, they usually work with local distributors in the strategically desired countries which are in charge of promoting and distributing their products
- Product development speed: Born globals engage in the development of new innovative products and services much faster than other companies due to the combination effect of their capabilities and resources: flexible, highly creative human resources, know-how, tangible and intangible knowledge, entrepreneurial vision and management experience and strategy. (cp.[Lampa and Nilson 2004,p.48])

A study involving 12 technology global born firms in England revealed some of the factors which determine these companies to internationalize rapidly. (cp.[Kudina, Yep and Barkema 2008, p.39])

One of the most important reasons consists of the characteristics of the home market. If the home market is small and does not have the potential required for the company to successfully operate, the firm is forced to seek for opportunities in the international environment. On the other hand, if the market is saturated, because the product or service provided by the firm has been present for a long time, the company has to offer its portfolio in countries where the product life cycle is still in an initial phase. (cp.[Kudina, Yep and Barkema 2008, pp. 40-41])

Some small global born companies are obliged to internationalize due to the fact that the majority of their customers are multinational large corporations present in many countries where they require the company's offerings. Being active in a high level technology area and providing customers with highly specialized products is also one of the key drivers towards internationalization since the cutting edge technology sector has a limited niche market to serve. In this kind of market and for these types of products, customer needs and tastes incline to be homogenous. The changes in the global environment such as the elimination or the diminishing of trade barriers: free organizations and agreements between the different regional alliances have allowed companies to internationalize faster and access global customers without having to face long lasting administrative procedures. (cp.[Kudina, Yep and Barkema 2008, pp.40-41])

Furthermore, the company might want to benefit from the first mover advantages and the freedom, flexibility and time to construct the desired partner network. On the other hand the decision to internationalize might be a reaction to the competitors' internationalization behavior necessary to maintain the company in a competitive position.

Experienced managers, with knowledge and know how regarding international business affairs are in most cases also a major factor influencing the strategy of the company and leading to a faster targeting of international markets.

Kudina, Yip, and Barkema 2008 consider that the success of born globals is highly dependent on how they manage to strategically exploit the advantages provided by their ecosystems. The authors differentiate between three types of ecosystems. The first type of ecosystem is composed of universities and companies active in the same field as the born global. As a member of such an environment the company benefits from the latest information and knowledge regarding technological developments, experienced people active in the field for a long time and possible local venture capitalists able to support the company from a financial perspective. The creation of this type of knowledge can in time lead to the development of a strong global competitive advantage. (cp.[Kudina, Yep and Barkema 2008, pp.42-44])



The second type of identified ecosystem is focused on the relationship between companies operating on the born globals home market and their foreign sales subsidiaries. The advantage of being part of such a network consists in acquiring relevant information and knowledge from people with international expertise. The ecosystem encourages the direct contact between clients and engineers, for a better integration of the customers' needs in the development process and realization of the end product. (cp.[Kudina, Yep and Barkema 2008, pp.42-44])

The third ecosystem is built around foreign sales subsidiaries and local clients. This ecosystems are composed contacts useful in obtaining relevant information about customers' preferences and needs which ought to be implemented in the development of specific products directly from the client or through the client's business partner. The alternative to obtaining information as described above would be self development of technological knowledge, which is much more time and cost intensive and provides no guarantee of being perceived positively by the customer. (cp.[Kudina, Yep and Barkema 2008, pp.42-44])

Considering the activities they undergo and the number of international markets they are active in, born globals can be divided into four main categories: [Bailetti 2012]

- The export-import start ups: the activities they perform are highly reduced and they are active just in few international markets
- Multinational traders: these companies can be identified through the trading of few products in a large number of international markets
- Geographically focused start ups: These companies manage to guide a lot of initiatives, but sell in a small number of international markets
- Global start-ups: The global start ups are in charge of a large variety of different types of activities, and are able to perform their sales process in a large number of foreign markets.

### 3. Theoretical Framework

The global born company which will be presented and analyzed both from an internal strategy perspective, but also all throughout the undergone internationalization process is Qidenus Technologies GmbH, an Austrian book scanner manufacturer.

The global born start up characteristics of Qidenus Technologies, are easily deducted without having the necessity of further information in this first analysis step:

- Due to the manufactured products: book scanners, it is clear that the capabilities of the local market are limited and that an internationalization process has to be prepared from day one. Moreover, Qidenus Technologies is part of a market where there are not so many specialized manufacturers and the world's demand for digitization is constantly increasing.
- Highly specialized products for niche markets is the Qidenus' way of differentiating and building a sustainable customer network
- The globalization process, the free trade agreements such as Mercosur or North American Free Trade Agreement, the common market of the European Union and the general increase in the world's level of homogeneity have facilitated the internationalization path of Qidenus Technologies
- The Qidenus corporate culture has to be globally oriented, understanding the necessities of each customer from whatever world region and adapting accordingly, This is accomplished also through an international environment and human resources from all over the world who integrate their capabilities, mentality and know how in the internationalization strategy of the company
- The CEO of Qidenus, Mrs. Sofie Qidenus, is a born entrepreneur, who founded the company at the age of 22, for her the world is the market and she encourages an entrepreneurial independent working spirit among her team as well
- As it will be presented later in this paper, the company has a wide distribution network in order to better cover and understand the particularities of each world region and has in the last years exponentially increased its development speed and significantly diminished its time to market

The next chapter will cover a thorough presentation and analysis of the company including its history and technology, its product portfolio, a SWOT analysis, a market segmentation and an overview on existing and potential clients.

In order to better understand the internationalization premises a short comparison with the main competitors is also provided. The marketing mix consisting of product, price, promotion, positioning and place conveys the ultimate starting point for the main part of the empirical research, namely the comparison between the challenges and opportunities encountered by Qidenus

Technologies in the internationalization process in the following regions: Western Europe, South-Eastern Europe, Middle East, Asia Pacific Region, South America and North America.

The formulation of the hypothesis relies on both the main influence factors in the internationalization process: political, economical, social and cultural, but also on market specific assumptions based on the correlation of the above mentioned factors.

The hypotheses determined exclusively by the external influence factors in the internationalization process are formulated as follows:

*H1. A successful internationalization strategy has to consider the status and the developments of the economic, social, political and cultural factors in the target market.*

*H2. The political situation and the budget allocation priorities in the foreign market are either the main causes for a reluctance in internationalization or for an even faster internationalization and a higher level of resource commitment.*

*H3. Economic factors have a fundamental influence on a market's purchase power and the company's pricing strategy in the region.*

*H4. The technological development of a country is strongly correlated with its demand for digitization.*

*H5. Socio-demographic factors such as the literacy rate, primary completion rate or the university completion provide an overview on the potential interest in the availability increase of digital information.*

*H6. Religion and customs have a fundamental role on the positive or negative development of business relations.*

*H7. In order to achieve the expected results, business has to be conducted differently in low and in high context cultures.*

*H8. Hofstede's dimensions and the scores of each country should be taken as a cultural basis when developing the internationalization strategy from the socio cultural point of view, otherwise the probability of a market failure will increase*

In order to obtain a broader world perspective regarding the demand for digitization and the current status globally, from the Qidenus Technologies point of view, the following market specific hypotheses are generated:

*H9. South Eastern Europe consists of emerging markets, which have a large development potential in the next years and should be considered an internationalization priority. Romania 2014 example*

*H10. The Middle East is difficult to approach from Western Europe due to the socio-cultural differences, therefore a local distributor will contribute significantly to the regional sales development.*

*H11. The Asia Pacific Region is economically and technologically highly developed, which reflects in their current status in the digitization sector.*

*H12. The United States is one of the most advanced countries in the digitization field is therefore be one of the country's with the largest number of Qidenus' customers.*

*H13. Mexico is in a difficult political and economical position at the moment and can therefore not invest in high quality industrial digitization equipment such as Qidenus.*

*H14. South America is in a development phase what digitization is concerned and this is proved in the ongoing and closed projects.*

*H15. The internationalization influence factors can not be perceived separately on the global markets, all factors have to be combined and evaluated as a whole market dynamic*

*prior to the internationalization process, otherwise errors which negatively impact the company, will occur.*

After the finalization of the company presentation and analysis in the next chapter, in order to have clear image base to project internationally, the above listed hypotheses will be empirically tested relying on the internationalization experience of Qidenus Technologies in the last years.

## **4. Company Profile**

### ***4.1 History and technology***

The company was founded in 2005 by Mag. Sofie Qidenus commenced its activities under the name Qidenus KEG. After receiving the first grant from the FFG-the Austrian Society for the Advancement of Research- and successfully completing the research on the automatic page turning technologies, the fresh company was accepted into the INITS incubator, an university based support for start-ups. This fact facilitated the access to professional expertise and accelerated the business development process in the years 2007 and 2008.

Along the years also other institutions who strongly believed in the innovative page turning concept contributed to the company's development such as: "Impulsprogramm", "WAFF", "ZIT", "Wirtschaftsagentur", "AWS" etc. The company provided the world with an innovative automatic page turning technology which was implemented in various products [Qidenus Technologies' Business Plan March 2013]:

Figure 2: Qidenus' Initial Product Portfolio



Source: Qidenus Technologies- Official Company Presentation 2013

- The Qicare: Product meant to be of help for people with disabilities
- The Qivinci: A Product designed for to facilitate the page turning technology for musicians
- The QiScan: A robotic book scanner able to independently digitize a book.

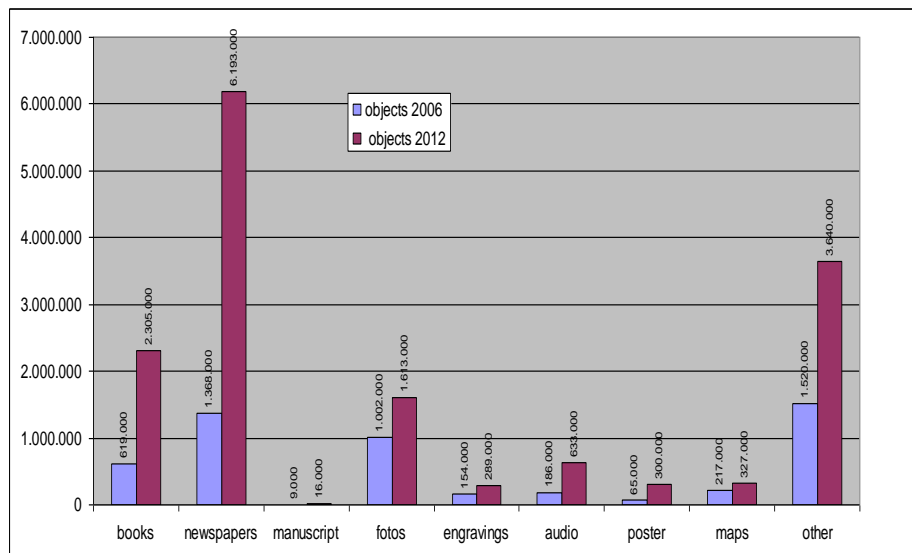
An innovation has been defined in many different ways. Thomas Edison states for example that „*Innovation is 1% inspiration and 99% perspiration.*” This definition best suits the company Qidenus Technologies who after implementing the innovative idea of the automatic page turning technology had to consider a strategic marketing strategy in order to transform the idea into a success. Due to the fact that that it was clear from the start that the company had to develop in the context of a niche market a fast internationalization process became a survival condition.

## 4.2 Product Portfolio

Qidenus Technologies won several awards for the uniqueness and innovativeness of its technology such as the Leonardo Prize for the best atomization technology and the Genius Prize for the best innovation. It has worldwide registered patents for its unique page turning technology: the intelligent bionic finger. The intelligent bionic finger is a copy of the human finger, it is made of a very sensitive material, it is pressure controlled and very gentle having just 5 square millimeters points of contact to the book.[Qidenus Technologies Unique Technology Features 2013]

Due to the good market response received by the robotic book scanner and the high demand for digitization due to various factors such as the possibility to preserve the knowledge for further generations and increase the information availability worldwide, the management of Qidenus decided to switch the focus exclusively to the field of automated page turning and scanning technology.

Figure 3: Digitization Growth Factor



- scanned books 2006: ~600,000 // 2012: ~2,300,000 // ~ FACTOR 3.8!
- scanned newspapers 2006: ~1,300,000 // 2012: ~6,200,000 -> ~ FACTOR 4.8!

Source: Qidenus Technologies Company Presentation 2013

The targeted customers of the book scanner producer Qidenus Technologies are libraries, archives, universities, schools, public state institutions such as ministries or specialized digitization service companies. Industries with a large amount of bound material such as the pharmaceutical industry, the engineering industry or the law and insurance firms also constitute important potential clients.

The main distinctive product of Qidenus Technologies is the automatic book scanner, able to independently turn the page and digitize automatically: „*A robotic book scanner is a high speed scanning machine designed for large volume digitization. The machine scans books fast, autonomously and in result economically. It uses an automatic turning mechanism and a V-shape cradle, capturing the pages with full format digital cameras. The 2in1 machine with its integrated manual mode allows the processing of any bound material in matching format*”. [Qidenus Technologies’ Technical Specification Sheet Robotic Book Scan 3.0, 2013]

The research and development of the Qidenus Robotic Book Scanner is a constant and ongoing process. Since the founding in 2005, three generations of automatic book scanners have been put on the market reaching the most important institutions around the world such as: The Library of Alexandria, The Royal Library of Denmark, The National Library of Norway ,the Abu Dhabi National Library and so on. [Qidenus Technologies’ Reference List 2013]

*Figure 4: 2008 Model 1 Qidenus Robotic Book Scanner*



*Source: Qidenus Technologies Official Company Presentation 2013*



*Figure 5: 2010 Model 2 Qidenus Robotic Book Scanner*



*Source: Qidenus Technologies Official Company Presentation 2013*

*Figure 6: 2012 Model 3 Qidenus Robotic Book Scanner 3.0*



*Source: Qidenus Technologies Official Company Presentation 2013*

Recently, Qidenus Technologies added two new products types two its product portfolio, the semi automatic Mastered 3.0 Book Scan System and the Smart 3.0 manual Book Scanner.

The Mastered Book Scan system is promoted by the company as being the most productive manual system on the market reaching up to 1500 pages per hour. They define it as follows „This part automatic book scan system is a high speed scanning machine especially developed for large scale book digitization. The machine uses a self centering book cradle

*in combination with an automated glass plate, providing the operator with a fast and constant scanning rhythm. Compared to flatbed scanners such a device achieves much higher throughput by at the same time less stressing the material [80°angle] and far less operator's interaction.*"[Qidenus Technologies' Technical Specification Sheet Mastered Book Scan 3.0 2013]

*Figure 7: Mastered Book Scan System 3.0*



*Source: Qidenus Technologies Official Company Presentation 2013*

The Smart Book Scan System on the other hand is a purely manual book scan system built according to the CCO and Managing Director Mr. Sebastian Schramek by integrating the feedback of all the partners of Qidenus Technologies who have experience with manual book scanners. It is meant to revolutionize the way of scanning by integrating a highly qualitative hardware system with an easy comprehensive software.

The new Qidenus Book Scanner is positioned on the market as follows: *„The capturing technology of latest CMOS sensors delivers outstanding image quality. The V-shape system in gentle 100° treats inserted material and originals conservatively. The glass plate of special coated glass provides the operator with speed & ease in handling. The consequent system construction results in outstanding productivity for a manual system. Finally: innovative design.*"[ Qidenus Technologies' Technical Specification Sheet Smart Book Scan 3.0, 2013]

*Figure 8: Smart Book Scan System 3.0*



*Source: Qidenus Technologies Official Company Presentation 2013*

### **4.3 Company Analysis through the SWOT diagram**

The SWOT analysis is a wide spread instrument used for the strategic company analysis. It considers the strengths and weaknesses of the company in comparison with the competition while at the same time gathering information regarding the threats and opportunities which might arise through the surrounding environment of the company (cp.[Downey 2007, pp.3-6])

The Strengths rely on the company's resources and capacities used mostly to create the basis of a strong competitive advantage. Important strengths which can make a fundamental difference on in the competitive environment are brand awareness and image, cost advantages. (cp.[Downey 2007, pp.3-6])

Weaknesses represent certain aspects which could represent a disadvantage for the company in relation to its competitors. As weaknesses one could consider the lack of patent protection, a weak brand, poor references and customer satisfaction and a weak distribution network. (cp.[Downey 2007, pp.3-6])

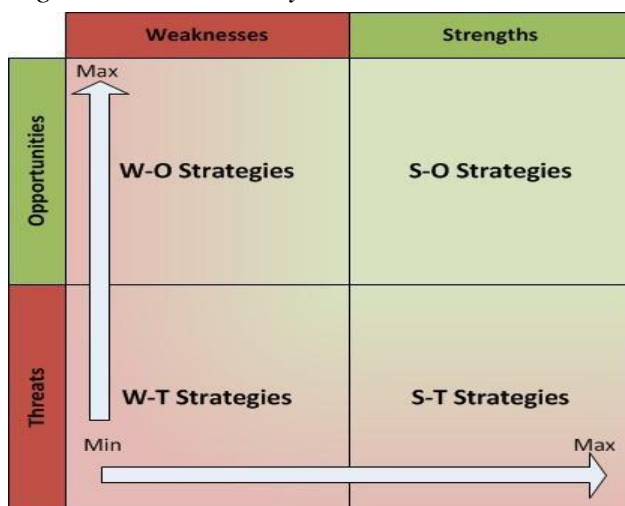
Opportunities often present themselves as growth perspectives given by the external environment such as: introduction and development of new technologies, increased

demand for a certain service, implementing of regulations favoring a certain state behavior or resource allocation or removal of trade barriers.(cp. [Downey 2007, pp.3-6])

Threats can consist of modifications in the external environment which could not be predicted or which can not be avoided and the firm has to construct a strategy as to overcome the possible repercussions. One could consider threats the strengthening of the competitions position, new legal regulations, appearance of substitute products etc. (cp.[Downey 2007, pp.3-6])

The combination between the strengths-weaknesses analysis and the threats and opportunities identification ensures the company with a concrete basis for further structural planning and development of the international business strategies.

Figure 9: SWOT Analysis



Source: <http://thousandinsights.files.wordpress.com/2009/09/tows2.jpg>

The Strength-Opportunities target to best value the market opportunities by using the companies strengths and competitive advantage. The weakness-opportunities parallel analysis could lead to the identifying of opportunities which might lead to a considerable diminishing of a company’s weakness or even to a transformation into a competitive advantage. The strengths-threats strategy aims to identify the strengths which could annul or decrease the effect of an upcoming threat. The weaknesses-threats strategies have as a main goal the prevention of the company’s weaknesses increasing the vulnerability to external environment threats.

## Qidenus Technologies- SWOT Analysis

### Strengths

- Unique technology to conservatively digitize all type of books
- Good references with customers all around the world
- Few competitors, especially on the automatic book scanner market
- International multi linguistic team members able to indentify across borders market opportunities
- High potential in research and development, fast ability to develop and extremely low time to market for a high technology company
- Innovative, appealing design of products
- Flexible human resources able to attend the necessities of customers worldwide with differences in local time
- Quality production and manufacturing process located in Austria
- Good internal communication flow
- Large amount of market representation requests

### Weaknesses

- Relatively unknown brand compared to other competitors, who have been on the market much longer
- Low level financial resources
- Low number of personal resources
- Confusion due to lack of hierarchy

### Opportunities

- Large amount of books to b digitized worldwide , especially in South-Eastern Europe, Asia, Australia, Central and South America
- Legal regulations with regard to the conservation of knowledge through digitization
- Budget allocation from the states side or important worldwide institutions and associations for increasing the knowledge availability through digitization

## Threats

- Economic crisis which left significant marks on economies around the world leading to the freezing of large digitization projects
- Corruption and political instability leading to the favoring of certain products and manufacturers
- Price decrease of the competitors' products
- Problems occurring in the distribution network
- Financial prioritizing could in difficult economic times disfavor the investment in digitization

## Further Strategies based on SWOT analysis:

### S-O Strategies:

1. The unique technology offered by Qidenus Technologies should be highlighted and used for the digitization of books especially in regions where this particular field will be developing in the years to come.
2. The multi linguistic team members should be able to perform a qualitative international market research and identify the institutions, regions and project where financial resources will be allocated to digitization projects. The unique strengths such as the quality Austrian manufactured products, the good references and the ability to adapt to each project's requirements due to the high research and development potential and customization opportunities should create a hard to defeat competitive advantage.

### W- O Strategies

1. The large amount of materials still left to be digitized is a good motivation for Qidenus to intensively promote its products through well designed and structured marketing campaign meant to diminish the handicap of not having been on the market so long as the competition
2. The fund allocation to digitization projects might, if obtained, help Qidenus increase its financial resources and as a chain reaction increase the amount of human resources able to contribute to the company's growth

#### S-T strategies

1. The possible price decrease in competitors' products might be overcome by using the company's research and development strength allowing to design and create products at a lower cost than the competition, fact reflected further on in the price. The high quality production materials and facilities from Austria could also represent a quality standard which can serve as a perfect argumentation as to the price differences between Qidenus and its competitors for certain product configurations.
2. The large amount of market representation requests might be used as an alternative to the current distribution network, if the relationship with one of the partners in some specific markets does not function according to plan due to the lack of involvement or lack of proactive product promotion, Qidenus has the chance to perform an evaluation and replace the local distributor with a more appropriate one.

#### W-T Strategies

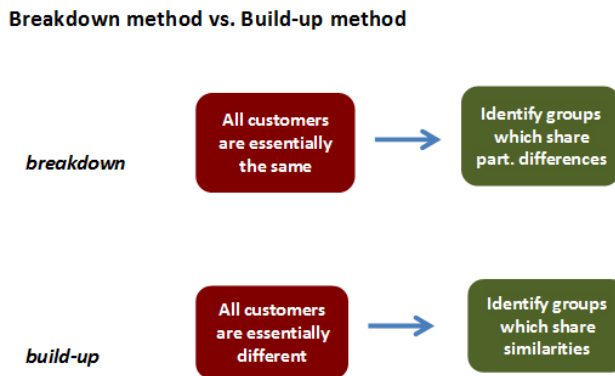
1. The company has to reach a stable financial situation able to ensure the survival of the company through rougher economical times.

### **4.4 Market analysis**

The marketing segmentation provides a guideline and direction for the marketing strategies and ensures the adequate allocation of resources to the identified potential target segments. (cp.[Katholnig et. al 2012, pp.3-19]).

Segments should be distinct, accessible, measurable and profitable. There are various segmentation methods (cp.[Katholnig et. al 2012, pp.3-19]):

Figure 10: The breakdown vs. Build-up method



(Baines et al. 2011)

Source: *Breakdown vs. Build-up Method (adapted from Baines et al.)-taken from Katholnig, S; Ilies, A; Stoica, A; Kermanshahi, G: Seminar Paper for the Course International Market Research "The Dictaphone Market: A Segmentation Attempt", 20<sup>th</sup> of June 2012,pp. 5-7*

The method applied by Qidenus Technologies is the build-up method. We assume that all our customers are different and then we try to identify groups which share similarities. By taking this system into consideration the following main potential customer groups have been identified for the current products:

- Libraries all around the world: National Libraries, State Libraries, Regional and City Libraries, Private Libraries
- Other important state institutions: Ministries (Culture, Education, Information and Technology, Justice), Statistical Institutes, Civil Registries
- Universities: State and Private University Libraries
- Archives: National and Regional, Church Archives, Private Archives
- Private Companies: Digitization Service Providers, Scanner Distributors

The market for automated industrial digitization is still in a growing process, main factors which played an important part in its development were: the development of the information technology and popularity growth of the internet as a source of knowledge and information, the high demand for access to digital content, in order to increase the



availability of information, the public and institutional interest in preserving the cultural heritage, funds allocated by the European Union, the appearance of a variety of technology possibilities which ensure a cost efficient mass digitization process and the growing demand for devices like book readers etc.

*Table 1: Market Robotic Book Scan System*

	<b>Archivist Segment</b>	<b>Industrial Segment</b>	
	<b>Private Libraries</b>	<b>Large Companies</b>	<b>Service Providers</b>
<b>Characterization of Customer</b>	Lack of infrastructure for digitisation. Economic Potential for digitization not fully reached. Available Budget	Lack of Digitization know how. Economic Interest for Digitization. Available Budget	Know how and infrastructure for digitization, depend on budget of public libraries and other customers. Require a high garde of automatization
<b>Size of Projects</b>	>1000 books	<1000 books	<1000 books
<b>Reasons for Digitization</b>	Preservation of Knowledge(true to original high quality), Providing scanned content in Internet/Intranet	Preservation of content is more important than identical quality to the original copy.More professional approach than libraries.Tendency to outsourcing of digitization	Outsourcing Partner for Libraries and large companies. Precise concept for utilization of scan robots. Demand scanning of high quantities in short time for low cost.Large projects such as Google, Microsoft, Yahoo, European Digital Library
<b>Required ScanQuality</b>	Moderate	Moderate	Moderate
<b>Decision Maker</b>	Library Director	CEO	CEO, Procurement
<b>Influencer for Decision</b>	Librarian/Archivist	Digitization Department	Digitization Department
<b>Length of Decision Process</b>	Variable-dependng on individual libraries	2 to 6 months	Variable depending on service provider
<b>Marketing Strategy</b>	Presentation at the customer's site,Road Show,Library Congresses, Conferences, Presentations, Personal Contact	Leaflets,Public Private Partnerships, Trade Fairs,Public Relations Events	Road show,Test Settings, Partnerships, Trade Fairs
<b>Customer Budget</b>	Available	Available	Variable depending on service provider
<b>Handling of Digitization</b>	Trend of outsourcing of digitization due to lack of infrastructure	Trend of outsourcing digitization due to lack of infrastructure, Minor interest to install necessary infrastructure	Specialists for mid-sized to large digitization projects, high interest for automatization of digitization process

*Source: Qidenus Technologies Business Plan March 2013*

**Table 2: Market Mastered Book Scan System**

	Archivist Segment		Industrial Segment
	Public Libraries	Private Libraries	Service Providers
<b>Characterization of Customer</b>	Lack of infrastructure for digitisation. Know How for digitization. Pressure for digitization of books. Lower budget in comparison with private libraries	Lack of infrastructure for digitization. Economic potential for digitization not fully achieved. Available Budget	Know how and infrastructure for digitization, depend on budget of public libraries and other customers. Require a high grade of automatization
<b>Size of Projects</b>	>1000 books	>1000 books	<1000 books
<b>Reasons for Digitization</b>	Preservation of Knowledge(true to original high quality), Providing scanned content in Internet/Intranet	Preservation of Knowledge(true to original high quality), Providing scanned content in Internet/Intranet	Outsourcing Partner for Libraries and large companies. Precise concept for utilization of scan robots. Demand scanning of high quantities in short time for low cost. Large projects such as Google, Microsoft, Yahoo, European Digital Library
<b>Required Scan Quality</b>	High	High	High
<b>Decision Maker</b>	Ministry of Culture	Library Director	CEO, Procurement
<b>Influencer for Decision</b>	Librarian/Archivist	Librarian/Archivist	Digitization Department
<b>Length of Decision Process</b>	4 to 12 months depending on public tender	Variable depending on individual library	Variable depending on service provider
<b>Marketing Strategy</b>	Presentation at the customer's site, Road Show, Library Congresses, Conferences, Presentations, Personal Contact	Presentation at the customer's site, Road Show, Library Congresses, Conferences, Presentations, Personal Contact	Road show, Test Settings, Partnerships, Trade Fairs
<b>Customer Budget</b>	Available or in obtaining process	Available	Variable depending on service provider
<b>Handling of Digitization</b>	Trend of outsourcing of digitization due to lack of infrastructure	Trend of outsourcing of digitization due to lack of infrastructure	Specialists for mid-sized to large digitization projects, high interest for automatization of digitization process

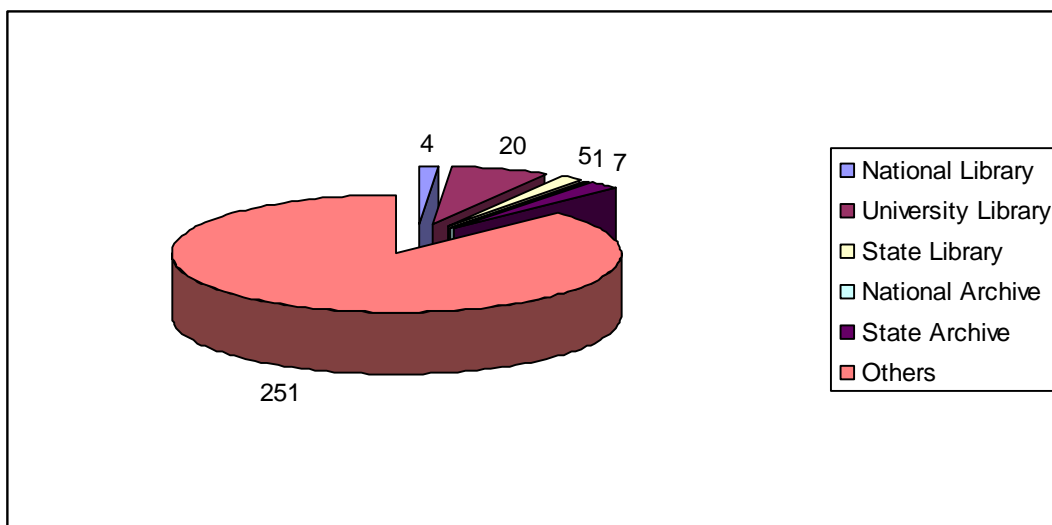
Source: Qidenus Technologies Business Plan March 2013

Google estimates the world amount of original, unique books between 74 and 175 million. At the moment just 10 million a year are scanned in large projects such as the Open Content Alliance or Google online digitization. In the next ten years, the market potential for automated book scanning is estimated at around 1200 assuming that the average life span of digitizing equipments, such as the Qidenus Robotic Book Scanner is approximately 7 years. Particularly in Austria 36 million copies of books were stored in 88 libraries, assumes the Statistic Institution Austria (2008) from which less than 2% of the stock has been digitized so far.[Qidenus Technologies Business Plan March 2013]

The European Union is also aiming to initiate and develop within the project “the European Library” a platform where the European cultural heritage is stored and accessible. In parallel Google, Microsoft and Yahoo intend to contribute to the digitization of 40 million books in the next five to ten years. Google’s expectations rely on scanning 15 million books from the university collections of Harvard, Stanford, Michigan and Oxford. The New York Times reports that Google has digitizes over 1 million books since March 2007. This is a reliable measure to forecast the potential in the upcoming years. [Qidenus Technologies Business Plan March 2013]

The open content alliance that consist of around 80 libraries estimates costs for scanning at around 0,1 USD per page or about 30,0 USD per book. The private cooperation of Microsoft with the British Library to digitize the first round of the total of 150 million books rises to a total cost of 8 million USD, showing the financial potential behind the digitization market. [Qidenus Technologies Business Plan March 2013]The existing customers of Qidenus Technologies can be divided into the following categories: [Qidenus Technologies Business Plan March 2013]

Figure 11: Segmentation of the Customers of Qidenus Technologies



Source: Qidenus Technologies Business Plan March 2013

Table 3: Total Number of Customers of Qidenus Technologies

Robotic&Mastered Existing Market	
Type of Customer	Number of Customer
National Library	4
University Library	20
State Library	5
National Archive	1
State Archive	7
Others	251
<b>Sum</b>	<b>284</b>

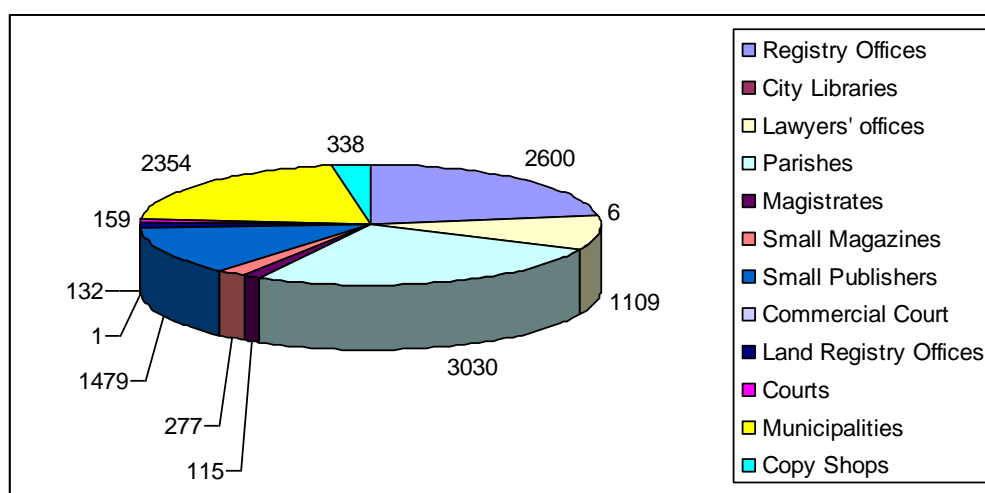
Source: Qidenus Technologies Business Plan March 2013

In order to however increase the market size, Qidenus came up with the new Smart Book Scan system, a revolutionary manual digitizing device . At the CEBIT 2013, the biggest technology fair in the world Qidenus presented the new equipment for the first time, the response being at a higher level of acceptance as expected. The potential customers to be approached for the marketing of the Smart System, were to be municipalities, copy shops, courts, land registry office, commercial courts, small publishers, magazines, magistrates, parishes, lawyers' offices, city libraries or registry offices. [Qidenus Technologies Business Plan March 2013]

From the research performed by the specialists within the company Qidenus Technologies, the market for the Smart Line is 40 times bigger than the previous one. A large variety of bureaucratic procedures will be eliminated as well, since for the majority of the Smart potential customers there will be no tendering process. The tendering process has been one of the variables which have been most difficult to integrate into forecasting calculations, because its procedures are extremely different around the world. While in Germany for example the tender parameters and publication dates are clear and respected, in South America the tender parameters can change various times and the decision can be delayed from 6 months to 1 year.

Therefore, the Smart Book Scan System increases not only the market size, but offers a better forecasting possibility, diminishes the resource input and delivers a high contribution to the revenue.

Figure 12: Potential Market for the new Smart Book Scan System



Source: Qidenus Technologies Business Plan March 2013

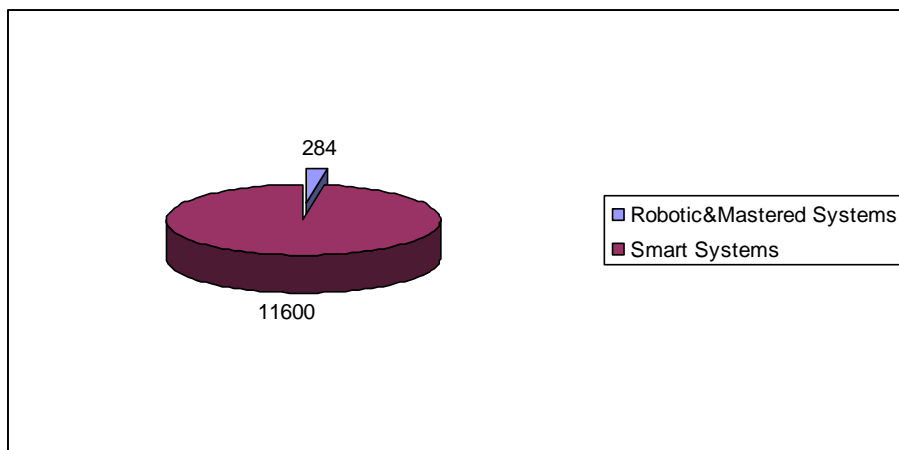
Table 4: Total Number of Potential Customers for the Smart Book Scan System

Smart Book Scan System - Potential Market	
Type of Customer	Number of Customers
Registry Offices	2600
City Libraries	6
Lawyers' offices	1109
Parishes	3030
Magistrates	115

Small Magazines	277
Small Publishers	1479
Commercial Court	1
Land Registry Offices	132
Courts	159
Municipalities	2354
Copy Shops	338
<b>Sum</b>	<b>11600</b>

Source: Qidenus Technologies Business Plan March 2013

Figure 13: Comparison between the Markets for Robotic& Mastered and the Smart Systems



Source: Qidenus Technologies Business Plan March 2013

Qidenus Technologies has various strategies to promote and sell the products and to achieve for the most important libraries and institutions all over the world the so called “repeat buying”. The specialized literature distinguishes between three forms of repeat buying: ( cp.[Ehrenberg 1988, p.53])


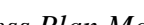
- buying an item on more than one purchase occasion
- buying the item in more than one time period
- more than one unit may be bought on the same purchase occasion

By far the most successful selling strategy is through distributors all over the world. The current Qidenus distributor network contains more than 50 partners who are participating two times a year in Vienna at our technical and marketing training. These partner events

are very important because the distributors have the opportunity to get familiarized with the latest product developments from a technological perspective and they are introduced with the most important sales strategies, as well as a thorough training concerning the old competition and their evolution, as well as new competitors and upcoming threats. An effective and goal oriented distribution system has to be carefully selected, motivated, evaluated and modified in time if necessary. (cp.[Kotler and Bliemel 2001, p.1095])

In order to be able to successfully promote and market the Qidenus products, the partners have to have a complex understanding of the Qidenus technology, its advantages and disadvantages compared to other similar technologies on the market. After the completion of at least one training session a new partner is able to handle the local installations and guarantee a flawless after sales service.(cp.[Kotler and Bliemel 2001, p.1097])

*Figure 14: Qidenus Worldwide Partners*

Australia	Digital Microfilm Equipment	
Belgium	Acemis	
Bulgaria	PSIT	
China	China Systems	
CIS countries	Acemis	
Germany	MIK Center/MSV Peine/H&K	
Ecuador	Technodigital	
France	IMDS	
Greece	A.M.S	
Hungary	Synergon	
Italy	Imaging System Service	
Qatar	MK Enterprises	
Mexico	Sivan Soluciones	
Norway	Interfoto	
New Zealand	Digital Microfilm Equipment	
Poland	Digital Center Poland	
Romania	Z Spot Media	
Saudi Arabia	E-File	
South Africa	Meniko	
Turkey	Bordo	
United States of America	Crowley	
United Kingdom	Covergold	

*Source: Qidenus Technologies Business Plan March 2013*

Distributors are evaluated on a yearly basis according to their sales performance, promotional activities and overall effectiveness. [Kotler and Bliemel 2001, p.1102] Should the distributors not fulfill their contractual agreements, a meeting is arranged in order to reassess the market situation and identify the reasons for the non achievement of the predefined tasks. Should the situation be related to the difficult market circumstances, Qidenus will support the partner in overcoming this obstacle, should however the

distributor bare blame for the lack of market success, Qidenus will be forced to reevaluate the cooperation and eventually contract a new distributor to cover the market.

One of the goals of Qidenus Technologies through its distribution strategy, directly and indirectly is to increase its brand equity. „*Brand Equity is the extent to which a brand is valuable to the organization; this value can be manifested in terms of financial, strategic and managerial advantages.*” (cp.[Riezebos et al. 2003, p.267])

The brand equity is composed of four important elements: (cp.[Riezebos et al. 2003, pp.269-270])

- the size of the market share underlining the preferences of the customers, who tend to purchase a brand with a high brand-added value than a brand with a low brand-added value
- stability of the market share, when a large proportion of the sales of the brand consists of repeated purchasing
- the margin which can be achieved with the branded article consisting of the difference between the selling price and the cost price
- the rights of ownership connected with the brand including patents, legal brand protection etc.

The brand evolution has to be continuously evaluated and monitored, since „*the success of an organization can to a large extent be determined by the success of a brand strategy*”. (cp.[Riezebos et al. 2003, p.270])

#### **4.5 Competition Analysis**

„*The key to superior performance is to gain and hold a competitive advantage. Firms can gain a competitive advantage through differentiation of their product offering, which provides superior customer value or by managing for lowest delivered cost.*” (cp.[Jobber 2010, p.713]) Qidenus Technologies has a strong differentiation strategy as far as its technology: both hardware and software is concerned.

In order to successfully construct a differentiated position, the company has to identify the sources of the competitive advantages usually consisting of the superior skills and



capabilities of the company.(cp.[Jobber 2010, p.717]) The superior skills are the unique features of the main resources distinguishing the company considerably from other competitors on the market, while the superior resources consist of: the number of sales people responsible for different markets, the distribution coverage and the network quality, the investments in technological research and development, the financial resources and the know how.(cp. [Jobber 2010, p.717])

The competition of the Qidenus Products can be classified into two different categories: manufacturers of fully automatic book scanners and manual books scanner manufacturers.

The main competitors in the production of fully automatic book scanners are [Qidenus Technologies Business Plan 2013]:

- Kirtas Technologies is a spin off of RankXerox, which entered the market in 2003. Kirtas currently holds almost the entire market share of fully automatic book scanners
- Treventus Mechatronics is a spin off of Vienna Technical University. Teventus has a strong presence Europe and is aiming for a larger international presence
- 4DigitalBooks is the newest producer of fully automatic book scanners, but they are growing rapidly and will start playing an important part on the international market

The Qidenus Robotic Book Scanners differentiate themselves from their main competitors in several fundamental areas [Qidenus Technologies Comparison with the Competition 2013]:

The page turning technology based on a clear mechanical system, the so called “bionic finger”. This is a copy of the human finger and worldwide registered as patent of Qidenus Technologies. It is built of a sensitive material, it is pressure controlled and very gentle. The system adapts fully automatic to different paper qualities and textures and is a clean mechanical system and by that never affected by dust and dirt coming from the books.

Kirtas and Treventus on the other hand use a vacuum system very often affected by dust and dirt. Production can even stop because all the dust is aspired into the machine, and the equipment might stop working. Moreover the vacuum system is a very rough and

damaging page turning system for valuable books, pages might get destroyed and affect the complete digitization process. For Qidenus, as the CEO, Mrs. Sofie Qidenus personally states „*the safety of the books and the perfect conservation of information*” is fundamental.

The Robotic Book Scan 3.0 is the only 3 in 1 scanner on the market. It enables the usage of 3 different modes in a gentle 80 degrees cradle: automatic mode, semi automatic and manual mode .This allows Qidenus to be the only manufacturer able to proudly state, that all the book range of a library can be entirely digitized using this equipment.

The Capturing technology relies on a dual camera system (2 digital cameras) using the top models of Canon or Nikon combination with the Carl Zeiss Lenses for an increased image quality and a more efficient digitizing process. This fact leads to an even higher level of image quality, sharpness and color fidelity. The max page size for the Qidenus book scanner A2 model is 30 x 44 per page larger compared to the other competitors, fact which allows Qidenus to integrate a larger variety of books in the digitization process.

Qidenus has an integrated electronic control and security system through the integration of the industry standard Beckhoff in order to ensure the 100% safety of the operators. The Security System of the book scanner also includes CE security switch and sensor light curtain is build to stop machine instantly & automatically (if anything - for instance human hand - comes into the machine. The Qidenus book scanner is the only automatic book scanner on the market with such security appliances, namely the high-end industry standard Sps Beckhoff.

The Qidenus equipments are the only ones on the market enabling a real double page control. The real time page turner has an integrated light sensor system measuring the light density of every single page and therefore controls if the process develops correctly, page by page. Kirtas and Treventus have no real functional double page control. A so called page separator tries to mechanically assure double page detection, but it works only in about 20% of the cases.

The Qidenus book scanners have an 80 degrees flexible book cradle, both horizontally and vertically. The side flaps of the book cradle and the spine holder are also flexible ensuring

an effective book digitization process and an efficient book fold readability. Qidenus is due to these characteristics the producer which provides the highest bandwidth of books to be scanned in an automatic mode, therefore being able to scan nearly 100% of a libraries book range. The security and proper conservation of valuable books is therefore assured. The competitors possess stiff book cradles which do not treat the books conservatively and might lead to book and material damages.

Qidenus works with a glass plate for an optimized quality and a curvature free digitizing process. It is special hardened, only 3mm thick and double layered .The immerse into the book is pressure controlled. The competitors digitize without a glass plate. Another key features characterizing the Qidenus book scanner and enabling productive & efficient production, is the fact that if problems occur (foldouts, loose pages, stuck pages), the operator easily switches to manual mode to scan that particular page, and then switches back to the fully automatic mode to continue the scanning process. Our system provides the opportunity of operating everything on one device saving costs and time in the overall digitization operation.

The Qidenus equipments require the lowest maintenance on the market. All parts are industry standard. On the other hand the Kirtas equipments require a higher level of maintenance due to the vacuum system which is very damaging to both machines and books.

As for the financial considerations, in spite of offering a wider variety of services, much better performance, quality and throughput, Qidenus Technologies is cheaper in terms of costs per scanned page. The system is portable, easy to transport and does not require additional infrastructure. The capturing technology via digital cameras is easy to exchange, maintain and adapt to upcoming technological camera developments.

The second category of competitors consists of the manual book scanners producers, from which the most successful are [Qidenus Technologies Comparison with the Competition 2013]:

- Zeuschel is a German company, built in 1961 and focused initially on microfilm reading equipments. The first color book scanner was produced by them in 1998. Their

focus is mainly on flat bed scanners, possessing just one V-shaped model the OS 12000 V

- Atiz is an American company, aiming mass sales through a competitive advantage based on low prices
- Image Access was founded in 1993, but acquired the international sales rights for Bookeye, their top product in 2010. The main advantage of the product is the possibility to scan books in 120 and 180 degrees

The product of Qidenus introduced on the market in 2013 which is meant to compete with the v-shaped manual book scanners on the world market is the Smart Book Scanner. The system is described by the COO and Managing Director Mr. Sebastian Schramek as being the most revolutionary manual book scanner with a V-shaped gentle 100 degree book cradle. It ensures the conservative treatment of the materials and original manuscripts.

Compared to the above mentioned competitors, the Smart Book Scan can digitize books up to a maximum scanning area of A1 using the latest CMOS sensors reaching up to 36 million pixels per camera. The Smart Book Scanner has the integrated “soft mode” glass plate system integrated, requiring minimal effort from the operator’s side for guiding of the glass. The professional software including capturing and processing features is also especially constructed for an easy, operator friendly use. These features have supported Qidenus in already selling 6 months after launching the product, equipments is China, Australia, Germany, Netherlands, Brazil and South Africa.

## ***4.6 The Marketing Mix of Qidenus Technologies***

### **4.6.1 The Product**

The product mix integrates all the decisions and procedures influencing the sales performance. This consists of all the products and services offered to the customer. (cp.[Meffert 1991, p.117])

Two relevant instruments in the product mix are the appropriate and strategic selection of the name and the highly qualitative packaging acting as a protection and as informative feature.(cp.[Meffert 1991, p.117]) Qidenus for example already distinguished its products by giving them a very explicit unique name which has the function of shortly describing the products and position it accordingly:

- The Robotic Book Scanner is clearly the most advanced system, working automatically and independently
- The Mastered Book Scanner requires a so called “ Master” an operator for the actual page turning, but the rest of the digitization process is completely automatic
- The Smart Book Scanner is as the name states it a simple and smart manual book scanning solution

Qidenus also perceives the packaging of the systems as possessing a significant importance, since in case of the lacking of appropriate packaging, some of the components might be damaged during the shipments to the customer’s site and the costs have to be covered by the company.

After its founding, Qidenus tried to focus on implementing the patented automatic page turning technology in various products targeting different market segments.

The first product Qidenus relied on, was the so called “QiVinci” a product meant to help musicians to concentrate strictly on performing and not being distracted by the necessity of turning the page of the notes. The automatic page turning technology, facilitated this process through the pressing of a foot pedal. This system targeted musicians all over the world and was supposed to be very successful, due to the estimated market size and the sales estimates. The results were however disappointing, because Qidenus was confronted with the traditionalism of musicians and heads of institutions, who preferred the common handling of the notes and did not believe in revolutionizing the music world through such a technology.

Another Qidenus product, meant to facilitate the life of people with different types of disabilities was the “QiCare”. The “QiCare” helped in the page turning process, enabling people who have lost their moving abilities to lead a life closer to what had been their

normality. Due to the limited target group, the product was considered from the perspective of Qidenus not long term profitable, and the production was suspended. Qidenus however, continues to be involved in charitable activities, trying to contribute wherever it can to make the life of people in need more beautiful.

The third Qidenus product was the so called fully automatic book scanner “RBS PRO”. The book scanner was an answer to the continuously growing demand for digitization, and especially independent, operator free book scanning. State institutions, but also private companies providing digitization service, needed an autonomous book scanner, able to work without the need of an operator’s interference. Qidenus covered this need by developing its first automatic book scan systems. The market response and the growing sales figures encouraged Qidenus to solely focus on the marketing and distribution of this product.

As the years went by, and Qidenus earned more experience and more influential customers worldwide it started developing another scanner generation, with an improved technology and an easier operating mode, since the handling had been slightly problematic with the previous products. Furthermore, Qidenus realized that an automatic scanner is not enough to be perceived as a manufacturer able to offer a complete solution and it therefore developed the semi automatic book scanner and in 2013 a manual book scanner.

The Qidenus Technologies Product Portfolio currently consists of three product categories:

- The Robotic Book Scan 3.0: the fully automatic book scanner, with a 3 in 1 function, able to scan automatically, semi automatically and manually suitable for libraries, archives and state institutions all around the world. The scanner is able to digitize completely independent, without the need for an operator’s surveillance. The available models are: A3 300 or 400ppi and A2 300 and 400ppi
- The Mastered Book Scan 3.0: represents the unique semi automatic book scanner of Qidenus Technologies and has been the preferred solution of high professional’s world wide. This product targets as the Robotic system the libraries, archives and state institutions and the private digitization service providers globally. The usual state institutions except libraries and archives having digitization projects are ministries such

as Ministry of Culture, Ministry of Education, Ministry of Information and Telecommunication etc. The available models are A3 300 or 400ppi, A2 300 or 400ppi, A1 250 or 300ppi

- The Smart Book Scan 3.0 is the innovative manual book scanner of Qidenus Technologies, The product was presented first time at the CEBIT Germany this year in March and it enjoyed a high recognition level. After just few months after launching the product is present in China, Australia, Germany, Belgium, Brazil etc. The usual customers for the Smart Book Scanner are smaller libraries, copy shops, parishes, lawyer's offices, commercial courts and so on. With this system Qidenus wanted also to enter some further important industries possessing a large amount of bound material, such as pharmaceutical or the aeronautical industry. The available models and configurations are A2 300 or 400ppi and A1 250 pr 300ppi.

Although the Qidenus Product Portfolio contains all the above mentioned standard models, customizations are constantly performed by the team of technical experts in order to cover the necessities of each project. This innovative and technological flexibility and know how help Qidenus offer efficient solutions even for the most challenging projects. Different institutions have already benefitted from an individualized solution:

- The National Library of Austria has been equipped with a different lightning system due to the explicit wish to scan without the standard glass
- The Royal Library of Denmark requested to have a special glass plate for the books where the writing reaches exactly the margins. Qidenus created and tested it, resulting in a 100% fold readability
- The National Library of France will also use a special Qidenus light system, achieving a real uniform light distribution on the page

Other technological developments and product customizations consisted of the so called "Multi station", enabling an operator to control the output of more book scanners from one central unit, ensuring a time efficient digitization process through parallel operation and quality control and individualized systems for books with unique features such as the special booklet scan unit or the special register scan unit.

Except the standard models, Qidenus, cumulating an experience of almost 10 years in book scanner manufacturing, has been specializing in providing a solution for projects with special considerations by systematically increasing its flexibility level in the product development process.

#### **4.6.2 The Price**

The Qidenus book scanner price level varies according to the configuration, resolution and additional services. The Robotic Book Scan 3.0, the fully automatic system is the most expensive of the Qidenus product family, due to the fact that it is a 3 in 1 machine able to digitize automatically semi automatically and manually. This feature in combination with the flexible book cradle, adjusting to the characteristics of every book, permits that 100% of a library's book range can be scanned without any problems. The Robotic Book Scanner compared to the other three automatic book scanner producers the most reasonable in terms of quality-price. It is above the price level of one of the competitors, who can however not achieve the output of Qidenus, at the same price level with another competitor and below the price level of the last competitor's systems.

The Mastered Book Scan 3.0, the semi automatic book scanner, is cheaper than the Robotic Book Scanner, because it does not have the automatic page turning technology integrated. The operator has to perform this task manually however the rest of the process is completely automatic . The Mastered System is a transition product between the Robotic and the manual system, being therefore situated in the middle regarding price positioning. The slightly higher price compared to other manual book scanners on the market, is compensated by the effectiveness and the digitization speed providing a fast return on investment.

The Smart Book Scan 3.0, the Qidenus manual book scanning system, is the newest Qidenus innovation enabling digitization through the so called "soft mode". The "soft mode" requires a minimal effort from the operator's side compared to other products in the same market segment. This system is the cheapest Qidenus Product, but is positioned at a higher price level compared to other manual book scanner manufacturers, due to the fact



that it has various technological features integrated which allow a more efficient and time saving digitization process than the rest of the system on the market.

The scanner price includes for the Robotic and the Mastered Book Scanner a software with 4 powerful applications: QiScan Acquire for Capturing, QiScan Job Control Center for the workflow management, The QiScan Batch Processing and the QiScan Image Processing enabling the image processing based on more than 25 algorithms such as crop, deskew, brightness, black&white, autocontrast, grayscale and an outstanding quality control. The Smart Software is more simple using just the most used image processing applications. The price also includes the necessary storage hardware.

The installation and configuration of the system on site, the training of the customer's operators, the shipment and the travelling of the Qidenus technician is charged additionally. The price can differ from country to country depending on the existence of a regional distributor. In exchange for his part, the local distributor promotes the Qidenus products and tries to identify potential customers. In some countries Qidenus works directly and can be therefore more aggressive in pricing. Due to its flexibility, Qidenus tries to adjust the price level to each country's needs, offering important discounts for certain reference customers or sponsoring projects. Price adapting in relation to the project size and the existing competition is also a factor of great importance in the Qidenus strategy.

### **4.6.3 The Promotion**

The promotional mix is one of the most important aspects of the Qidenus' company, because in spite of the high technological value, the products can not be sold as planned without an optimal product presentation and promotion. The promotional strategy of Qidenus consists of direct marketing, personal selling, sales promotion, public relations and advertising.

The direct marketing is a method to communicate with potential customers without intermediaries, method which Qidenus has been using since its founding when the resources were still limited and the distribution network was not as developed as nowadays. The process started through a complex research of the most important potential customers worldwide. This information was stored in the Qidenus database and used for further marketing campaigns. The campaigns consist of sending emails with the product brochures, technical specifications and the references of the most recent installations. The emails are usually followed by a telephone follow up. The process can however be done also the other way around, starting with cold calling and proceeding with further information such as product characteristics and advantages.

Product videos and an interactive website are also put at the disposal of the customers who can better understand the equipment functioning through the videos, but can also grasp a piece of the company culture through the website, the blog and the press articles discussing the Qidenus company. Individualized videos with explanations, but also online live demos are also a fundamental part of the Qidenus' Sales Process.

*„Personal Selling is the interpersonal arm of the promotion mix”* [Kotler and Armstrong 2008, p.453] and is vital in successfully marketing products with a high value and a strong investment character. While advertising is defined as an unilateral communication targeting certain market segments, personal selling consists of a bilateral, highly personal communication between sales people and potential clients.(cp. [Kotler and Armstrong 2008, p.453]) Convincing customers to purchase the equipment is most efficiently done through an oral presentation. This can occur during a sales meeting by inviting the customers to the company headquarters, travelling to their premises, meeting at a technology fair or event or having an online conference.

From the Qidenus experience the face-to-face selling has always better results than the selling through the telephone. In order to increase the sales figures Qidenus tries to participate to all important technology fairs all around the world such as CEBIT in Germany, the International Federation of Library Associations, the Australian Library and Information Association, the American Library Association and so on with one or more equipments to demonstrate and present to potential customers. The motivation of the

distributors is another key point which Qidenus tries to keep at a high level. The distributors are invited minimum two times a year for a Sales&Marketing, but also a technical training including the newest product developments at the Qidenus headquarters in Vienna. The best distributor receives a special recognition and incentives from the Qidenus management as a sign of gratitude for the efforts in promoting and selling the Qidenus products within its region.

The Public Relations is defined „*mass promotion tool through building good relationships with the company's various publics by obtaining favorable publicity, building a good corporate image, and handling or heading off unfavorable rumors, stories and events.*” [Kotler and Armstrong 2008, p.441]

The functions performed by the public relations departments include: press relations, product publicity, public affairs, lobbying and investor relations. (cp.[Kotler and Armstrong 2008, p.441])

This is usually guided by Qidenus Technologies through frequent appearances in the media, such as written press and television. In the last year due to its interesting development Qidenus enjoyed the press attention and was covered in press article all over the world: United Kingdom, Germany, Austria, Serbia, Croatia, Romania etc. The most important article appeared in the Wired magazine, the most influential technological magazine. Recently, the Qidenus core competences and services, as well as the company culture were covered by two Austrian television companies: ORF and Servus TV. This increased even more the brand awareness and the popularity of the Qidenus' company.

Qidenus is however not only focused in being present in the media, the company is also focused on charitable projects, trying to offer sponsored prizes in countries with serious economic difficulties such as Ethiopia or getting involved in projects such as “Library for all” and facilitating the access to information, knowledge and education. Recently, Qidenus has even organized a digitization Experts Event inviting important representatives of institutions in the digitization world to openly discuss the problems they are confronted with and the possible solutions from a technological point of view.

Another component of the mix is advertising, the presentation and promotion of the products represented in the Qidenus company by direct mailing, sending of product brochures and promotional product videos, television and media appearances as mentioned before, a simple, explicit and interactive webpage and a blog where the participation at the most recent technology fairs and partner in house events are posted. Recently a cooperation started with a big storage company which invited the Qidenus company to hold presentation at some its events in different countries. The new partnership will doubtlessly be fruitful, due to the complementary products of the involved parts and the possibility to offer a complete solution in any large digitization project, both the book scanner and the storage infrastructure. Qidenus has also partnerships with Bertelsmann and Hermann&Kraemer in Germany.

Except the above mentioned strategies, Qidenus has to conduct an effective sales promotion in order to be able to maintain a high competitive level and increase its sales volumes. The sales promotion is meant to increase the demand and facilitate the access to the product. This is usually achieved through the participation at all the important technological exhibitions, but also at the conventions organized by the library associations worldwide.

The prioritization is based on the forecasted sales potential of the different regions. In house events at the distributors' sites are also used to stimulate the sale demand in the region. The most recent in house event was conducted by the Qidenus distributor Sivan Solutions from Mexico, who invited all the potential customers from Mexico: libraries and state institutions for a presentation and a test setting of the Qidenus equipments. The in house events at the partner's site are from the experience of Qidenus more effective in terms of sales numbers than the technology fairs, due to the lack of competition and the better strategic discussion and presentation orientation.

The focusing on one of the promotional mix components and the neglecting of the other would surely lead to a disappointing evolution of the sales process, therefore Qidenus tries to combine the most important features and achieve a complex and efficient strategy reaching a large number of customers and increasing the Qidenus brand awareness.

#### **4.6.4 The Place**

The distribution system is complex and constantly evaluated and analyzed by the Qidenus sales representatives. A limited part is based on exclusive distribution in different countries or regions. Usually this is a long term partner who has gained these rights in time, by preparing and developing his country and by achieving the closing of various successful projects. All requests which Qidenus receives from this particular market have to be contractually based forwarded to the customer.

The majority of partners are working based on a non exclusive distribution. The exclusive distribution is an open topic and will be granted after the evaluation of the sales accomplishments. This is very advantageous for the company due to the fact that it works as a motivation factor for the partner who struggles to get the exclusive distribution rights and tries to constantly improve its performance, both also because if the current partners results are not satisfactory, the company has the freedom to offer distribution rights to other local companies and increase its success chances on that particular market.

Another option is the combination of exclusive and nonexclusive distribution, offering the possibility to increase the number of countries with exclusive rights in different territories if the sales result rise to the established expectations. In this way Qidenus is gaining due to the work on other non exclusive markets as well and even if the sales results are not satisfactory and the partner does not accomplish its goal to be able to exclusively activate on other desired markets, Qidenus gains the know how, due to information exchange and might better decide on an appropriate local partner company.

Another distribution possibility is a project based cooperation, where the companies do not have any interest in collaborating in the future, because for example the local company's core business is not scanner distribution and they have no interest and resources to further pursue it, but they have a current project and they would like to complete it by using the Qidenus Technology.

Another part of the Qidenus Sales process is the direct selling performed by the Qidenus Sales members. This occurs either through a direct request from customer, for example a

library preferring to work directly with the manufacturer due to mostly the direct price advantage or by new customer acquisition through different coordinated marketing campaigns.

Only half of the partners have an enlarged local network which allows them to strategically position and promote the new Smart line, which as presented above is aimed to address a much wider target group. Due to this reason one of the new goals of the company is to heavily enlarge the distributor network in order to reach as many customers as possible. The Smart line is even more than the other products, especially because of the much lower end customer price, meant to be sold directly. The team internally has been reorganized and trained to face this new challenge.

#### **4.6.5 The Positioning**

Positioning is in the scientific literature perceived as the procedure of transmitting certain information regarding the product or company to potential customers which significantly differentiates the product from the offerings of the competition. [Fill 1999, p.556]

In order to be able to develop a strong market position the following aspects have to be considered (cp. [Fill 1999, pp.557-558]):

- Positioning Strategies of the competition
- Identification of positioning assumptions and strategies already adopted by the competition
- Elaborating the desired brand positioning based on the gathered market information
- Implementation analysis of the selected strategy by considering both the competition and the internal company resources such as for example the budget limitations
- Constructing a concrete program to reach the aimed positioning
- Constant monitoring of the brand perception by potential customers and the development of market trends

Qidenus Technologies aims to position the company as the most qualitative and technologically flexible book scanner manufacturer on the world market. The almost 10 years experience and the worldwide customers confirm their experience in providing efficient solution for the book digitization processes. Recently, the company tries to develop its customization capacities and resources in order to attend even the more challenging scanning projects.

As for the third, recently introduced product line, the Smart Book Scan Systems, Qidenus has tried to analyze the existing manual book scanning solutions and to come up with an even better, more effective and qualitative solution. Since the marketing and selling process is still in an initial phase: the majority of the customers who have acquired the system are the Qidenus' partners and distributors who will try to promote and position the product on their specific markets. The market share in this segment is still very low, due to the recent market entrance and the larger number of competitors compared to the automatic book scan systems, but the Qidenus market research has forecasted a highly significant market growth in the next years.

#### ***4.7 Qidenus Technologies: Challenges and Opportunities in the Internationalization Process***

##### ***Comparison between Western Europe, South-Eastern Europe, Middle East, Asia Pacific Region, South America and North America.***

The internationalization process of Qidenus Technologies has followed a different path in each world region due to the differences in the most important influential factors such as political, economical, technological, socio-cultural and demographical factors. In order to be able to achieve a basic comparison between the forces which encouraged and pushed internationalization and the factors which represented obstacles to be overcome, one or two representative countries will be chosen as an example in the analysis.

#### **4.7.1 Political factors**

*„Internationalization decisions are strongly affected by developments in the political and legal environment. This environment is composed of laws, government agencies, and pressure groups that influence and limit various organizations.”* [Kotler and Keller 2006, p.93] While some governments might support the trade with foreign countries and a globalization of the market, other lead a protectionist policy towards their own markets, strongly discriminating via bureaucratic ways products which have certain origins. Moreover, the company has to take into consideration the political and legal circumstances of the home country in relation to the host countries, the bilateral and multilateral agreements, the treaties etc. (cp.[Czinkota and Ronkainen 1996, pp.101-102])

Qidenus Technologies has been confronted with the positive or negative influence of political developments in the past years all around the world.

One of the most important influences is given by the local content laws. The local content laws consist of government legislation which influences the demand or the possibility to purchase a certain good or service.(cp.[Czinkota and Ronkainen 1996, pp.108-109]) In this particular case, the government influences the investment in education and educational infrastructure, creation of digital libraries for schools and universities or the creation of a national digital library. The funds allocated for the educational infrastructure can be allocated to a certain country, also by the European Union or by different associations and foundations. This information has to be carefully followed and registered by the Qidenus team, so that the prioritizing marketing strategies are built accordingly. Countries where the government has until now systematically supported the cultural heritage preservation process are Western Europe for example Germany and France, Northern Europe represented by Denmark, Sweden, Norway and Finland, the United States, Australia and recently the developing Asia and Latinamerica.

When internationalizing, Qidenus Technologies and its partners have to consider the operating risks which might lead to possible prejudices and negative interferences with the company's activities and operations. A good example is Lebanon, a country with a high potential in the digitization field, but with which the business relations are still uncertain

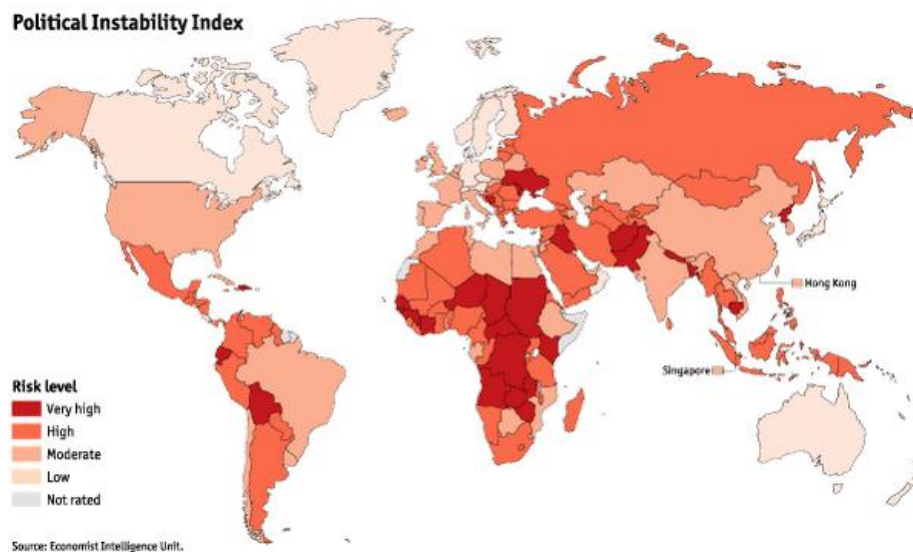


due to the situation in Syria. The partner company fears that a project start might not be convenient now, because in case of an USA attack on Syria the Lebanon airports might be closed, the goods could not be shipped on time, state institutions would not function normally, banks could have a temporary cease of activity and this might lead to a high capital transfer risk and an overall project failure.

Another interesting example where the political factor has a vital role in the business development consists of the Arabic Countries. Arab countries have developed a black list of companies who have dealt with Israel and refuse to enter any kind of business relationship with them. (cp.[Czinkota and Ronkainen 1996, p.109]) Qidenus Technologies as a global company targets both regions has however focused more on the Arab world due to the high financial potential and demand in digitization. Should however, a project with an Israel company be considered, a complex strategy has to be developed in order not to prejudice or influence negatively the ongoing business development in the Middle East.

Countries where the situations is not so extreme, but where the political instability and uncertainty does not always permit the normal run of the projects for Qidenus are located in South-Eastern Europe, some parts of Asia and Latin America. The change of the government party might lead to the not completion or finalization of the agreement signed with the previous government. This can have as an outcome the tender or project cancellation, due to different perspectives in the budget allocation.

Figure 15: Political Instability Index in 2009-2010



Source: [http://nazret.com/blog/media/blogs/new/3382199299\\_a6b9135094.jpg](http://nazret.com/blog/media/blogs/new/3382199299_a6b9135094.jpg)

The graphical representation clearly illustrates the country with the highest political instability risk from the different world regions: Ukraine and the Republic of Moldova in South-Eastern Europe, Syria, Pakistan and Afghanistan, North Korea in Asia, a large number of African countries such as Nigeria, Sudan, Angola, Zambia and Kenya, Dominican Republic, Bolivia and Ecuador in Central and Latin America.

As an internationally operating company Qidenus Technologies is permanently confronted with the political instability consequences. In Europe, business in Romania and Moldova has been affected significantly by political developments. Projects in Pakistan have been running for more than one year without a clear finalizing perspective in the near future, while the Syrian civil war considerably affects the business relationships and project evolution with the nearest countries such as for example Lebanon. The African continent has recently started to be targeted by Qidenus Technologies and successful projects have been closed in South Africa and are in the negotiating phase in other African countries such as Nigeria and Kenya. As for Latin America, the graphical representation is true to

the project reality of Qidenus, since important projects have been postponed or lost in the Dominican Republic, Bolivia and Peru, due to the political instabilities. However, contrary to the trend, Qidenus Technologies has just successfully finalized a two equipment project in Ecuador after intense negotiations and constant budget changes.

Further, Qidenus Technology has to properly evaluate together with its local partners and distributors the degree of market control in the foreign countries. „*The market control is an attempt to achieve a specific economic or political goal through the deliberate manipulation of factors such as supply, demand, pricing or taxation*” [Business Dictionary Online 2013]. The priority settings of each country depend mostly on its development phase. Qidenus Technologies has been confronted in some of the foreign countries for example Brazil, with high importation taxes of 100%, fact which influenced considerable the client’s purchase decision. The reason for these high importation taxes on highly developed technological products is, in the opinion of the Qidenus distributor in Brazil, the desire of the government to encourage local research, development and manufacturing of advanced technological products.

The above mentioned case of Brazil is a typical tariff ad valorem trade barrier, where the charge is a straight percentage of the value of goods. Other tariff barriers are the specific ones where charges are imposed on specific goods by either volume or weight or discriminatory, where tariffs are charged against goods coming from a particular country, either where there is a trade imbalance or for political purposes. These last trade barriers have however never considerably affected the Qidenus Technologies internationalization process.

The business relationships of Qidenus Technologies have suffered more from non-tariff barriers such as quality conditions imposed by the importing country on the exporting country, complex regulatory environment, consisting of exaggerated administrative rules and requiring additional trade documents such as Certificate of Origin or other certificates meant to prove the compliance with different local standards, which diminish the velocity of import flow into a country. Qidenus had to overcome this obstacle when trying to sell to Saudi Arabia, where the products had to correspond to the local requirements and be verified by experts in Saudi Arabian quality standards. The verification process and the

obtaining of the necessary certificates led to a project delay of almost two months. A lot of resources and time had to be invested to stabilize the relations with the end customer and regain the previous satisfaction level.

The political circumstances, but most of all the countries' historical background can generate a positive effect in the internationalization process of Qidenus Technologies, as an European book scanner manufacturer. In some regions, European products are perceived as highly qualitative for example in Latin America or Africa people associate Europe with certain quality standards and status, fact which considerably influences their purchase choice. Moreover, as a company coming from Europe, Qidenus Technologies has a clear political advantage towards its American competitor in all the former Soviet Union countries, in Africa, Middle East and some countries of South- and Central America. This advantage has to be exploited and turned into a market leadership for automatic book scanning technology in these particular regions.

As presented above, the political situation in a country, let's take Syria as an example is not only affecting the country itself and blocking all upcoming projects, but also the neighbour countries such as Lebanon, leading to a reluctance from the manufacturer's, but also from the customer's side to internationalize due to high risks in case of an upcoming war with countries of NATO. On the other hand, in countries from Western Europe where the government focuses on improving the educational infrastructure, or in countries from Eastern Europe which the European Union is supporting with funding for creating a digital information database, Qidenus is eager to invest and commit resources in order to successfully implement its technology confirming H2.

***H2 Confirmed.*** *The political situation and the budget allocation priorities in the foreign market are either the main causes for a reluctance in internationalization or for an even faster internationalization and a higher level of resource commitment*

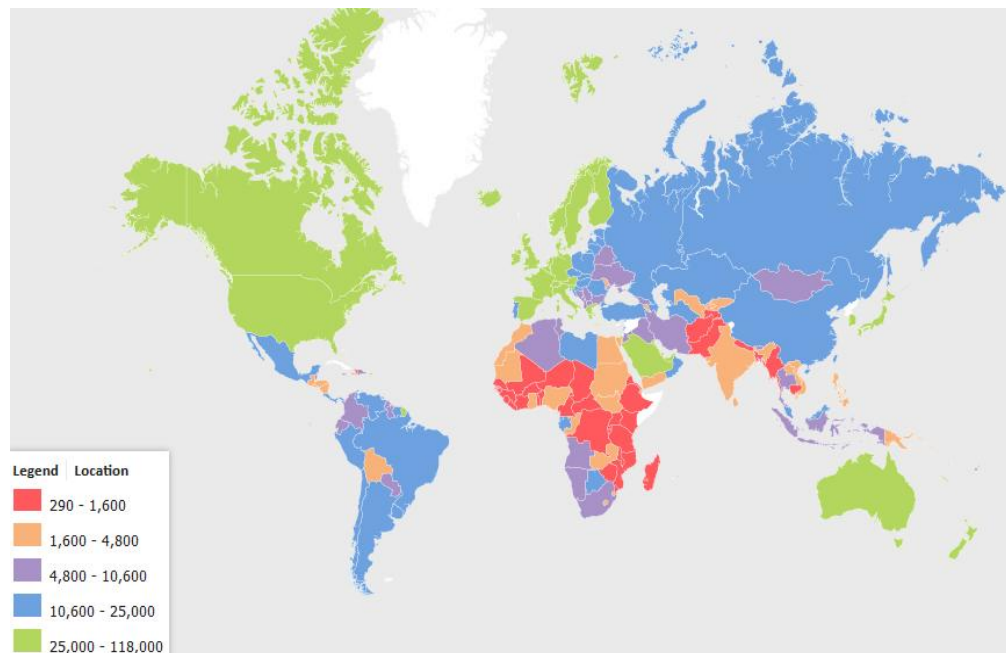
To conclude, some political aspects might act in favor of the Qidenus internationalization process, and some might be barriers which have to be overcome on the way to world wide success.

## 4.7.2 Economic factors

The economic factors are one of the major points to be discussed in the internationalization process of the global born companies. Although their product is constructed at the beginning in order to target the whole world, the non homogeneity of the world's financial situation is leading to a complex strategy building in order to keep the desired profitability level and still try to be world wide present. „*The available purchasing power in an economy depends on current income, prices, savings, debt and credit availability. Marketers must pay careful attention to trends affecting the purchasing power, because they can have a strong impact on business.*” [Kotler and Keller 2006,pp.85-86]

The Gross Domestic Product and the Gross Domestic Product per Capita are the economic indicators which best represents the situation on the specific market. The graphic below, gives an overview of the gross domestic product per capita in the regions and countries considered for the comparison.

Figure 16: GDP Per Capita July 2013

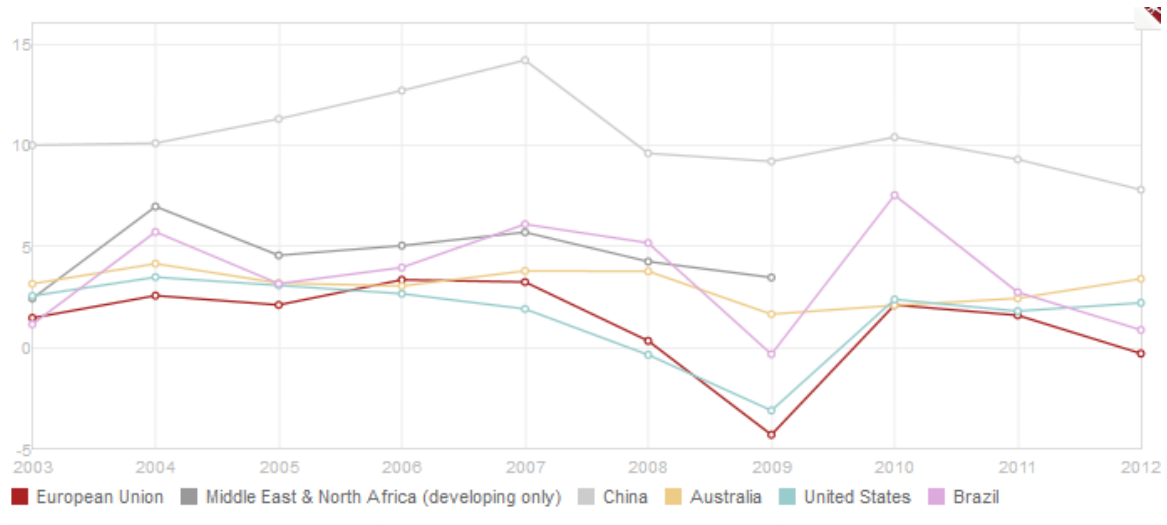


Source: <http://knoema.com/atlas/maps/GDP-per-capita>

The graphical representations clearly shows that the European Union is the most prosperous of the analyzed regions, fact which is concretely proven by the sales figures of Qidenus Technologies as well, more that 70% of the sales taking place within the European Union, with a larger concentration in Western and Northern Europe. The second place is occupied by the United States, however this is not reflected in the sales results from the region. This can be explained by the strong local advantage of one of the main competitors of Qidenus, called Kirtas Technologies and the lack of distribution power in the segment. The United States are still a market which is constantly developing due to the investments performed in the digitization infrastructure on a regular basis. Qidenus must take advantage of this aspect and strengthen its local position through a wider distribution network and a competitive advantage represented by either technological capacities or price.

The GDP Annual Growth in Percentages facilitates a future strategic planning, by taking into consideration the regions which were not considered in the initial globalization plan due to their economic level, but which a possess a considerable future potential. A lot of companies commit the mistake, to perceive interesting markets as the ones who enjoy the best current economic level, disregarding the forecasting and the long term evolution. Qidenus Technologies prioritizes as well, however, markets with proven development potential are submitted to intensive marketing campaigns to increase brand awareness for the moment in which they will be able to invest in the appropriate digitization infrastructure.

**Figure 17: GDP Annual Growth in Percentages**



Sources: Created by Andreea Stoica based on data from <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>

The graphical representation demonstrates the fact that not all current strong economies will benefit from a strong annual GDP growth. The European Union had in 2012 a GDP growth close to 0% therefore overtaken by all other regions: Brazil with an economic growth of almost 2% representing the South America trend, but decreasing compared to the previous year, United States with 2,5% increasing slightly in comparison with 2011, Australia with 4% keeping the slow growth rate from 2009 and China with 7,5% decreasing by 1,5% compared to 2011.

All these aspects have to be considered and integrated in the internationalization plan. China is for example a market Qidenus Technologies just entered, a market which in spite of its potential is not mature enough for high state investments in quality digitization equipments. It is however expected that in the years to come, the Chinese government will invest in the preservation of their cultural heritage through digitization. The Chinese market is the perfect example where the economic potential does not reflect direct proportional on sales, because other factors, such as the cultural and the political ones play a much more important role. In the previous trials to successfully close a project we have been confronted with these obstacles. However, the Chinese Partner we have, is constantly

building the ground in order to increase our chances and achieve important contracts with reference customers which might have a multiplication function attracting further clients.

Australia on the other hand, another country with a strong economical background started investing large resources into digitization in the year 2012, motivating Qidenus to search and find a competent partner, able to handle the distribution responsibility and take advantage of the optimal conditions for closing projects in the digitization fields. Qidenus succeeded in doing so and is currently working on various projects which will doubtlessly help increase the presence on the Australian market.

The United States as discussed in the previous graphic representation is a country Qidenus entered three years ago. A cooperation started then with the partner company which acquired various products. However, in spite of the market trend, the Qidenus partners have had modest sales. This can be explained by the fact that the partner company is representing at the same time one of our other competitors of manual book scanners named Zeuschel and they incline to promote Zeuschel to our disadvantage. Another reason why Qidenus is not well represented in the United States is the local advantage of Kirtas Technologies, one of the four automatic book scanner producers worldwide. They possess the implicit and explicit market knowledge, have the experience and the connections to maintain their market leadership. Qidenus has to try very hard, first of all by renegotiating the cooperation terms with the partner, and developing its distribution network by region, because a country like United States can not be managed successfully with solely one partner.

Brazil, as the entire South America has fluctuating growth rates, due to different factors which diminish the country's stability level. The political factors mentioned before played a fundamental role in the development of Qidenus in South America. Political uncertainties, corruption and bribery caused the loss of a variety of projects. Recently, Qidenus has through intensive direct work from Vienna managed to sell two equipments in Ecuador, one in Brazil and one in Chile. This takes the company one step further in catching up to the main competitor from the region Kirtas Technologies. Kirtas Technologies operates in entire South America from Brazil and Chile. Qidenus on the



other hand tries to have one or more distributors per country in order to ensure a proactive promotion of the Qidenus product line.

The Middle East is becoming a much stronger force and will be playing a growing role in the world economy therefore Qidenus pays close attention to the investments they will be performing in the next period of time. The influential reference customers such as the National Library of Abu Dhabi, King Faisal Education Centre from Saudi Arabia etc help Qidenus considerably in development of the markets. Trained partners personally instructed by Qidenus Sales Managers increase the brand awareness in Saudi Arabia, Dubai, Abu Dhabi, Oman, Qatar, Kuwait.

The African continent was always a challenge for Qidenus and has until recently not been considered a marketing priority due to the limited resources allocated for the digitization process. However, markets such as South Africa, Nigeria or Kenya start perceiving the importance of the digital content and Qidenus deals more and more with enquiries from the region. Recently, the CEO, Mrs. Sofie Qidenus managed to close a partnership with an African company who purchased an equipment for demonstrations in order to better present the Qidenus products to the customers. The purpose of Qidenus is to slowly become a world brand, which all potential customers can associate with quality and efficient digitization.

Another factor which is important in the internationalization process is the exchange rate. Qidenus operating in Euros is considered to be more expensive in almost all countries worldwide with the exception of the United Kingdom and Switzerland. Because of this, the price strategy is carefully considered and adjusted to the particularities of every region, so that global customers can have access to the innovative technology produced in Austria.

The fluctuation of the exchange rates has to be taken into account, in order to better perceive the price positioning of the products and has to be integrated in the overall price strategy. The currency stability differs from country to country and Qidenus has to ensure that the forecasted exchange rates information have been considered when developing the pricing system for the distributors and customers from different countries.

Table 5: Fluctuation of exchange rates (the data from 2013 and 2014 is forecasted)

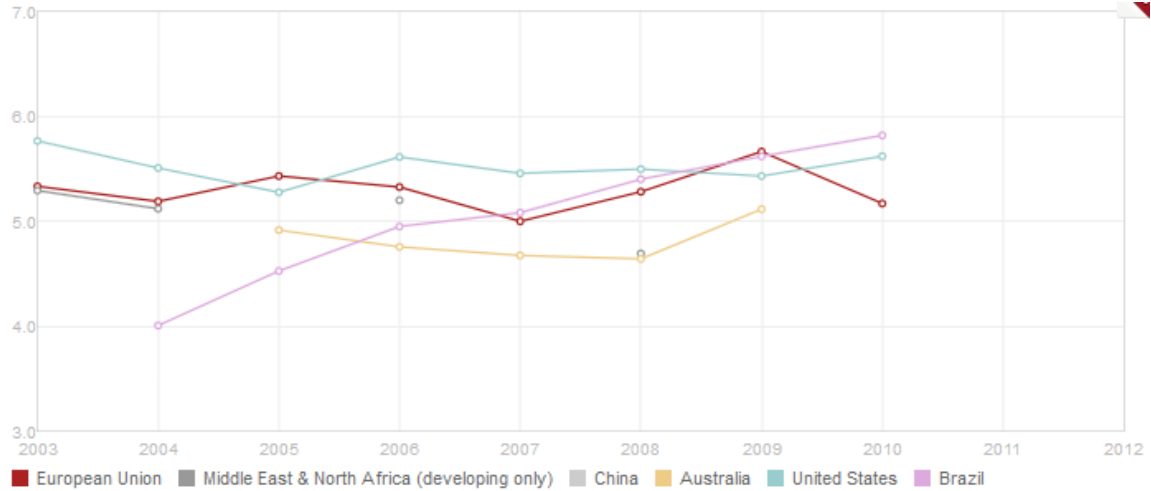
Currency	2009	2010	2011	2012	2013	2014
US Dollar	1,3948	1,3257	1,3920	1,2848	13.162	1,3189
Pound sterling	0,8909 4	0,8578 4	0,8678 8	0,8108 7	0,8515 4	0,8519 1
Swiss franc	1,5100	1,3803	1,2326	1,2053	1,2310	1,2322
Japanese yen	130,34	116,24	110,96	102,49	126,93	128,40
Canadian dollar	1,5850	1,3651	1,3761	1,2842	1,3471	1,3596
Russian rouble	44,137 6	40,262 9	40,884 6	39,926 2	41,706 6	42,649 0

Sources: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tec00033&plugin=1>

Moving from general economic indicators, which gives us an overview of the financial situation of the country, an analysis of the single indicators of interest such as public spending on education has to be made. This gives us an overview on the demand level for digitised material as an information source and the attitude of the government towards the educational system and implicitly of the creation of digital content.

The public spending as a percentage of the GDP indicates how the education is situated on the priority pyramid of the government. In these investments, from the Qidenus Technologies experience a part, depending on the request and project is always allocated for digitisation purposes in different educational institutions such as universities, schools, state institutions. The higher the public spending the more interesting it is for Qidenus Technologies to enter and operate on that specific country.

Figure 18: Public spending on Education as % of GDP



Source: <http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS/countries/EU-XQ-CN-AU-US-BR?display=graph>

The graphical representation offers a surprise result, due to the fact that a South American country, in this example Brazil allocates almost 6% of the GDP to education, showing a clear development trend also in the area cultural preservation and increasing the knowledge access in that particular region. This fact has been proven by the large number of enquiries received recently from South America due to the large amount of projects which will be initiated there and the recent sales in Ecuador, Brazil and Chile. Although this region was not included among the priority countries 9 years ago, now it overcomes the major world powers when it comes to the percentage of GDP allocated to education.

The United States still slightly increases the percentage, compared to the European Union who decreased its budget for education considerably. It can be because they are already at a high level and not so many investments are required or because they simply decided to change their priority structure. The world regions such as Asia and Africa allocate now less to education, due to other considerations, they will however when reaching the desired development phase increase their public spending for education and will then eventually decrease it again as the developed countries have done it in the past. It is a cyclic concept.

The Qidenus internationalization strategy relied also on the combination of the number of libraries (as the main customer) per country, the number of volumes (as potential material to be digitised) and the expenditures per country for this sector.

*Table 6: Statistical Data for Libraries Worldwide*

<b>Country</b>	<b>Number of Libraries</b>	<b>Users</b>	<b>Volumes</b>	<b>Expenditures</b>
<b>Germany</b>	<b>11,418</b>	<b>11,371,384</b>	<b>3,765,041,717</b>	<b>\$ 2,791,915,929</b>
Austria	2,603	1,663,332	71,176,572	\$ 182,404,250
<b>France</b>	<b>6,003</b>	<b>11,870,122</b>	<b>206,023,200</b>	<b>\$ 1,857,796,885</b>
Saudi Arabia	5,317	485,420	15,345,843	\$ 6,191,937
United Arab Emirates	1,364	35,000	3,453,745	\$ 5,502,452
China	109,673	15,160,109	1,063,356,687	\$ 152,000,440
<b>Japan</b>	<b>45,707</b>	<b>60,668,547</b>	<b>1,123,808,654</b>	<b>\$ 3,402,158,652</b>
<b>Australia</b>	<b>11,013</b>	<b>14,523,813</b>	<b>130,900,826</b>	<b>\$ 1,826,558,340</b>
New Zealand	2,749	1,713,829	27,325,387	\$ 212,712,642
South Africa	11,372	NA	52,756,234	\$ 484,705,816
Nigeria	273	296,563	11,082,019	\$ 6,675,461
Kenya	301	411,679	3,201,169	\$ 44,135,156
<b>United States</b>	<b>103,657</b>	<b>228,431,131</b>	<b>2,596,166,391</b>	<b>\$21,558,025,590</b>
<b>Canada</b>	<b>17,239</b>	<b>36,283,289</b>	<b>269,058,081</b>	<b>\$ 1,245,972,930</b>
Mexico	13,308	57,286,220	75,662,394	\$ 181,744,087
Brazil	22,545	21,310,249	58,078,980	\$ 453,645
Argentina	2,537	720,538	29,860,743	NA
Chile	7,718	154,462	11,528,217	\$ 2,261,325
Ecuador	1,662	224,747	1,910,760	NA
Peru	2,644	69,563	11,645,412	\$ 3,110,402

*Source: <http://www.oclc.org/global-library-statistics.en.html>*

The table is representative and confirms one again the above mentioned arguments supporting the Qidenus strategy. The table illustrates that the United States has the largest number of libraries, users and expenditures, followed by Germany who has more material to be digitised than the United States the expenditures are however far behind. The line is followed by Japan, France and Australia, all undergoing a high level of expenditures.

Germany is very well covered by Qidenus Technologies who works with three distributors and one important partner. France and Australia are submitted to intense marketing campaigns and partner in house events in order to increase the sale numbers.

On the other hand Japan is still in at the beginning, because Japan is a country where a direct work is excluded. A partner is needed in order to overcome the cultural barriers and the political obstacles, however due to language and cultural considerations developing the desired partnership is still in ongoing process. Qidenus has now employed resources which are also in charge of researching and contacting potential partners in order to defreeze the market for the Qidenus' Products.

The above analyzed figures clearly state that the economic factors significantly influence the purchase power and the company's pricing strategy in the region, therefore confirming H3.

***H3 Confirmed.** Economic factors have a fundamental influence on a market's purchase power and the company's pricing strategy in the region.*

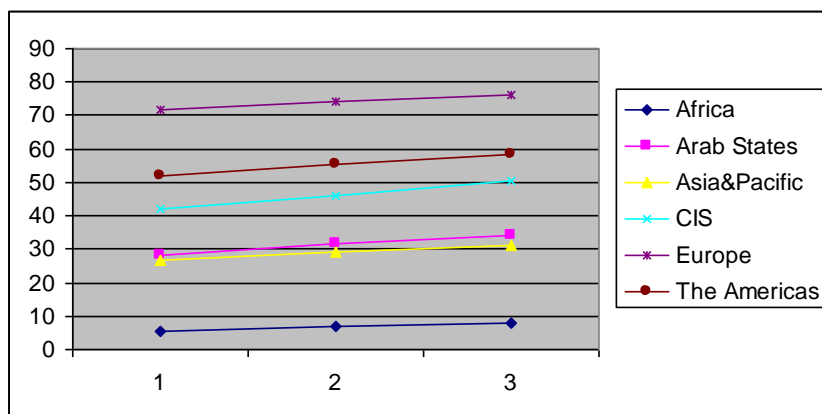
Considering this important economical factors it is important to be able to assess in which moment a country or region in development represents an opportunity and when it represents a challenge. This analysis has to be performed by combining the different economical, political and technological factors.

#### **4.7.3 Technological factors**

The relevant technological factors which are determinant in the analysis of the internationalization process are the following: household with a computer, households with access to internet at home and individuals using the internet. The selection was made based on the considerations, that without a computer, individuals would access digital content more rarely or not at all. This indicator is strongly correlated with the measure stating the household percentage with internet access at home, since the majority of digital libraries can be accessed solely trough internet basis. These figures would give Qidenus an idea

about the potential demand for online materials. Moreover, this information has to be matched with the total percentage of individuals actually using the internet.

Figure 19: Households with a Computer



Source: <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

As predicted, Europe is situated on the first place with a percentage of more than 70% of the households owning a computer, followed by the Americas with 50-60%. This situation is correlating perfectly with the digitisation projects available all around the world showing that in a higher development phase countries start considering the cultural preservation factor.

In Europe, the Western countries such as Germany, Austria or France have already conducted major digitisation projects and can be considered some of the Qidenus most faithful customers, the Nordic countries such as Denmark and Norway follow the trend and consider the cultural preservation as one of their core values.

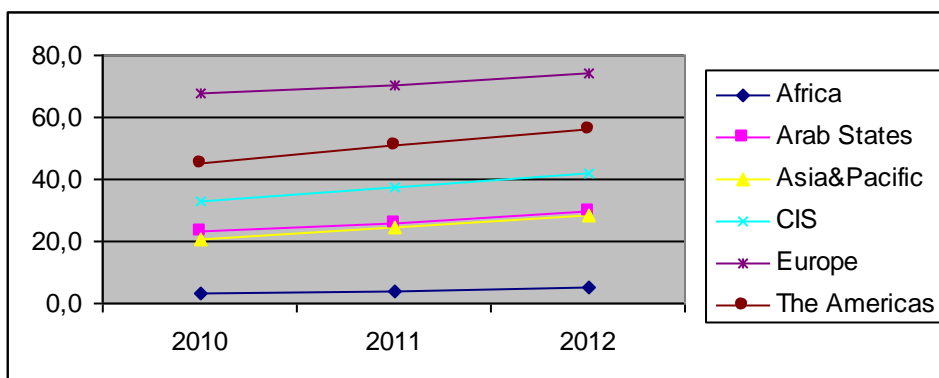
The United States have by far the most potential, especially through the high technology companies such as Microsoft and Apple, the Google Digitisation Project and many other large scale processes, but is in this analysis biased by the integrating of South-and Middle America, development regions in the same indicator. The CIS countries with almost 50% are catching up to the Western technological trend, creating and enhancing the possibilities

for large infrastructure projects in the different institutions including book scanners: this is the case for Turkmenistan, Azerbaijan, Kazakhstan where Qidenus is already represented.

The Arabic Countries and the Asia Pacific region revolve around a percentage of 28-32% of computer ownership, fact which states that even though some of the states are currently not mature in the technological aspect, they have a future potential which needs to be exploited accordingly. Africa takes the last place, due to the difficult conditions which the majority of the countries in the continent face, a computer ownership is considered to be a luxury.

In order to better define the most interesting and accessible markets from the infrastructure point of view the household percentage with internet access at home is relevant, because they are the ones able to increase the demand for digital content and the ones which can access the libraries online.

Figure 20: Household with Internet access at home

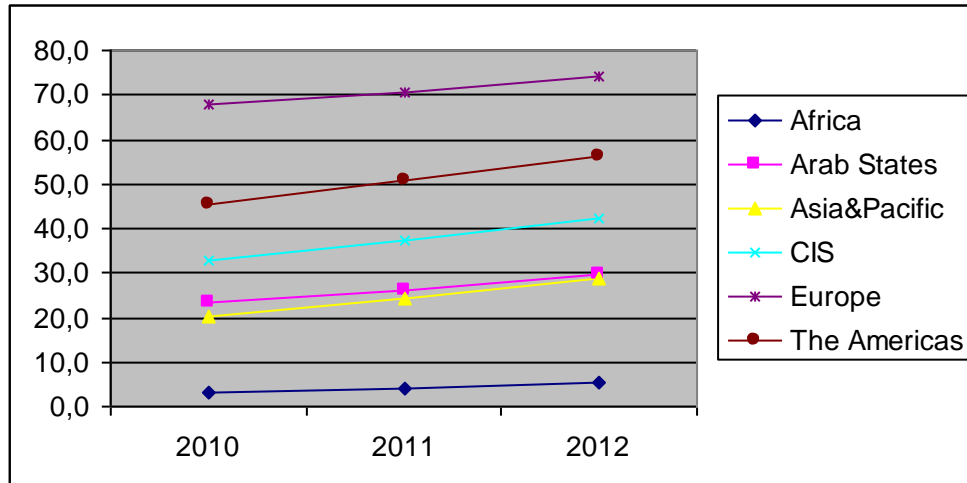


Source: <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

The results do not differ from the output regarding the computer ownership. Europe is a clear leader followed by the Americas, CIS countries, the Arab world and Africa as the least developed of the regions. According to these criteria Qidenus Technologies has at the beginning also constructed its strategy, targeting the countries with the most potential at first and slowly working and developing the markets where potential was identified on middle and long term.

The access to internet is however not entirely useful for our analysis if the internet is not actually. Therefore it is important to see how many of the ones with internet access actually use the internet actively.

Figure 21: Individuals Using the Internet



Source: <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

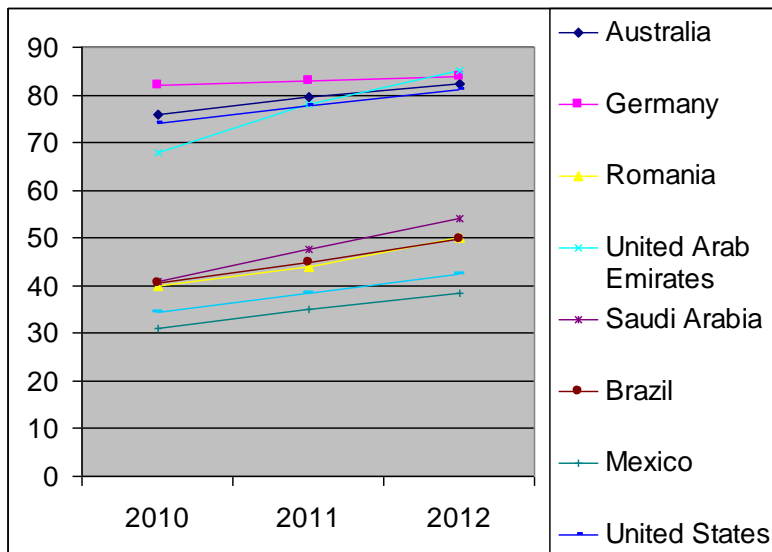
The graphical representation states that from the almost 80% with internet access in Europe, more than 70% are actually using it. In the Americas from the 60% with internet access, almost 60% are online active, which leads to generalized conclusion that usually individuals with internet access use their rights accordingly.

These combined indicators confirm thoroughly what Qidenus has already considered in the internationalization process starting with the DACH region, Nordic countries, followed by Eastern Europe, the Americas, CIS, the Arab World and the Asia Pacific region. However, there are some countries within the region which heavily distinguish from the overall development trend and which slightly bias the indicator.

In order to better perceive the characteristic and uniqueness of each country, a country analysis of internet usage has been performed in different important potential markets for Qidenus Technologies.



Figure 22: Percentage of Individuals Using the Internet



Source: <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

The above conducted representation confirms the technological superiority of Western Europe with Germany and demonstrates the fact that in the European Union homogeneity still has a long way to be reached. This is visible through the difference of 30% between Germany and the South-Eastern European country Romania. Germany is slightly overcome by United Arab Emirates a strong representative of the Middle East. Shortly below, Australia and the United States are situated followed by Saudi Arabia, Brazil, Romania and Mexico. The non homogeneity within the regions has to be considered for the long term internationalization planning, because some countries might be perfect to approach now, while some countries from the same region represent long term potential markets.

The above presented graphs illustrate the clear dependence of demand for digitization with technological indicators such as households with a computer, households with internet and percentage of individuals who actively use this service. Without computer or internet there is no demand for digital information confirming H4.

**H4 Confirmed.** *The technological development of a country is strongly correlated with its demand for digitization.*

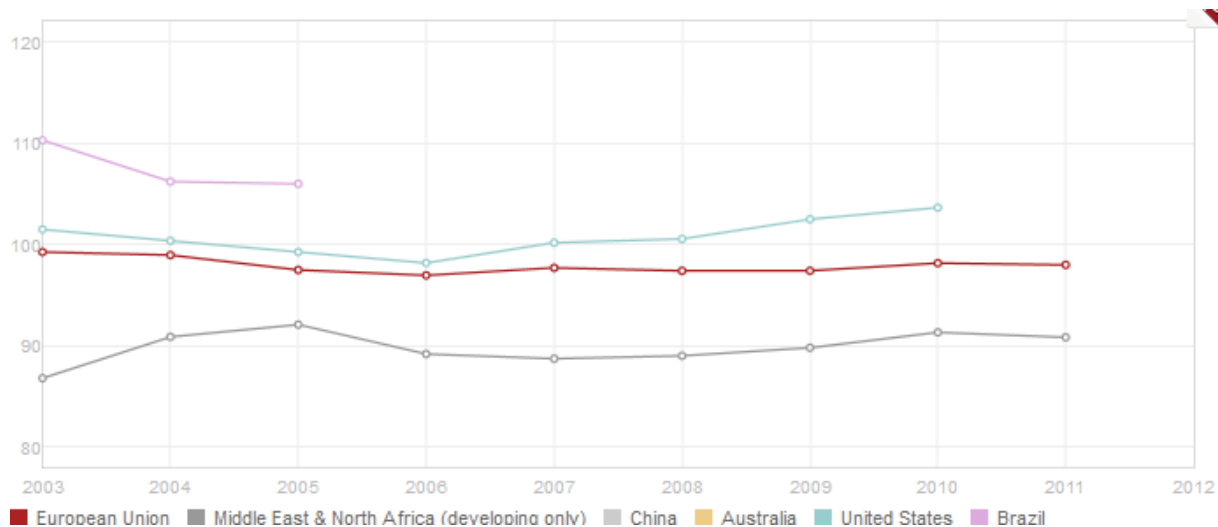
#### **4.7.4 Socio-Cultural and Demographic Factors**

Along with the political and economical dimension, the socio-cultural factors can determine the success or failure of a company as Qidenus abroad in the unfamiliar markets. The market entry and the approach method of potential partners or customers directly depend also on the socio-cultural and demographic factors.

*„Purchasing Power is directed towards certain goods and services and away from others according to people’s tastes and preferences. Society shapes the beliefs, values, and norms that largely define these tastes and preferences. People absorb, almost unconsciously a worldview that defines their relationship to themselves, to others, to organizations, to society, to nature and to the universe.” [Kotler and Keller 2006, p.87]*

Three relevant socio-demographic factors in the context of the development of educational infrastructure are the primary completion rate, the university completion rate and the basic literacy rate. Primary completion rate is the total number of new entrants in the last grade of primary education, regardless of age, expressed as percentage of the total population of the theoretical entrance age to the last grade of primary.

Figure 23: Primary completion rate, total (% of relevant age group)

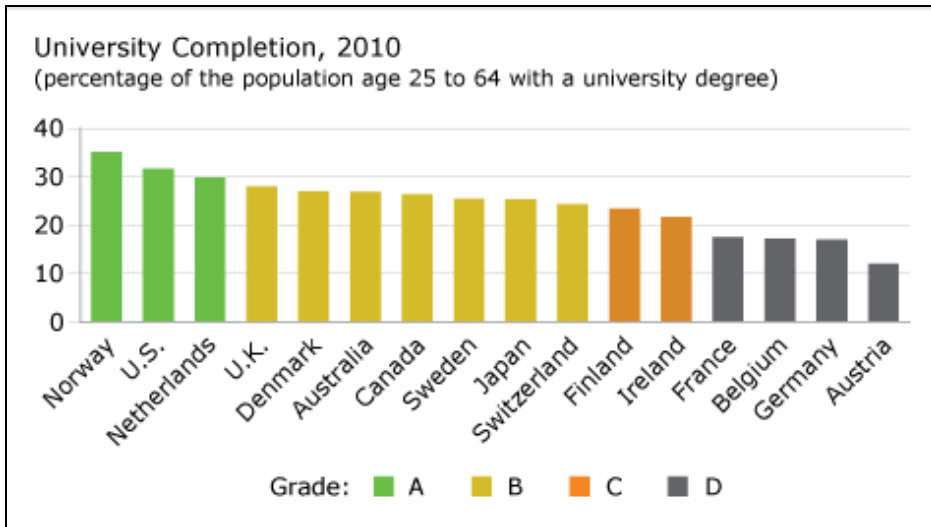


Source: <http://data.worldbank.org/indicator/SE.PRM.CMPT.ZS/countries?display=graph>  
 adapted by according to necessary data

As extracted from the graphical representation, the United States and the European Union have the better rate, fact which connects perfectly with the digitization projects on the globe mainly issued in the United States and in the European Union. This can be explained the following way: the higher the education level, the higher the need for digital information of unique books or materials, but also the higher the understanding of working digitally with written documents which are very hard and uneffective to handle with physically. Civil registries, Churches, Universities, Libraries and Ministries from these regions have adopted this politic and will be slowly followed by other countries.

Taking it a step further, the university completion rate can also be an indicator for the demand of access to information and book digitization. Especially in universities, students need material for exam and research papers preparation, materials which are very scarce and expensive. Digital content enables them to develop professionally and play an important role in the society. Moreover, they will as professionals have doubtlessly a more increased need to information which should be accessible digitally.

Figure 24: University Completion Rate

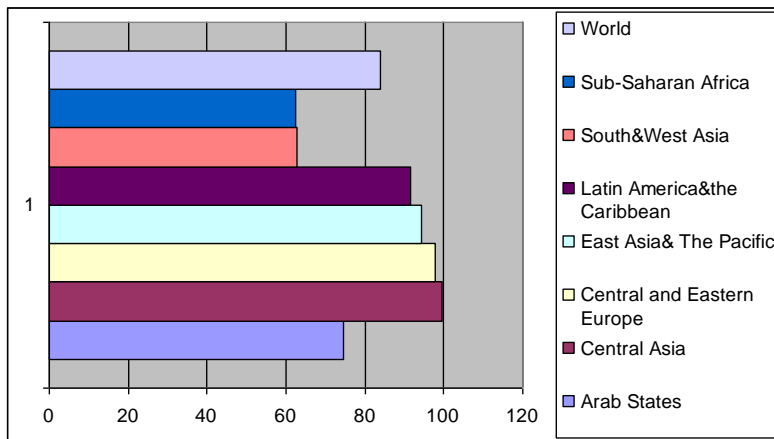


Source: <http://www.conferenceboard.ca/hcp/details/education/university-completion.aspx>

As resulted from the graphical representation the Northern European countries Norway and Netherlands accompanied by the United States have the highest university completion rate situated above 30%. This fact corresponds perfectly with demand in digitization and increasing the availability of digital content. The countries which follow are further countries from Northern Europe along with Australia and Canada. Should we make a direct correlation with the big digitisation projects and investments worldwide, Australia and Denmark would be ranking high joined by countries from the Western Europe.

As the schooling level, the literacy rate is the basic function to be analyzed, a country with low literacy rate has other priorities before digitization and that is educating its people and solving the fundamental problems. The literacy rate helps to understand the demand for digital content of books and the prioritization structure of the government investments.

Figure 25: Adult literacy rate in percentages 2010



Source: [http://huebler.blogspot.co.at/2012\\_05\\_01\\_archive.html](http://huebler.blogspot.co.at/2012_05_01_archive.html)

The graph clearly shows that the Arab World, South Asia and Sub-Saharan Countries are far behind concerning the literacy rate. In the Arabic countries this can be explained by the lack of access to knowledge for women decreasing the overall level and in South Asia the poor conditions led to this decreased level compared to other regions of the literacy rate. As with the previous indicators, the results match perfectly with the Sales structure of Qidenus Technology who has a strong position in the European Union, recently gained market share in Australia and Latin America, and is in a development phase in all the other regions.

The results of indicators such as literacy rate, primary completion rate or the university completion rate build up a basis in order to analyze the potential interest in the increased availability of digital information, therefore confirming H5.

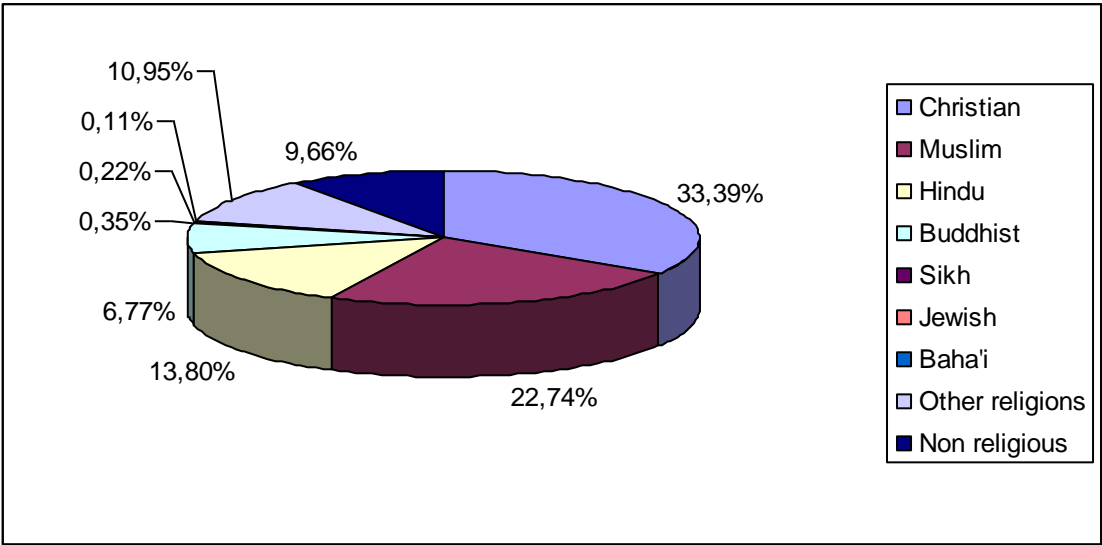
**H5 Confirmed.** *Socio-demographic factors such as the literacy rate, primary completion rate or the university completion provide an overview on the potential interest in the availability increase of digital information.*

Another relevant factor which has to be considered when developing the international market strategy is the religion. Many times, the religion and the customs and celebrations associated with it are underestimated by the companies.

From the experience of Qidenus being aware of the business partner’s religion and having a vast knowledge regarding the influences generated in the professional life is highly beneficial. Qidenus for example, programs its marketing campaigns for Muslim countries differently, due to the specific celebrations, for example Ramadan. During Ramadan the business activities with the Muslim partners are minimal. Qidenus however tries to send a special felicitation card to the Muslim partners before the celebration showing the respect towards the partners’ religion and customs.

Not only positive experiences have occurred in the international business activities of Qidenus. Although the company tries to consider the necessities, traditions, beliefs and religion of the partner company into consideration, sometimes unexpected events occur which lead to critical decision. On of these cases is Japan. Qidenus Technologies was negotiating a potential partnership with a large Japanese company, and had even a test setting programmed in Japan. However, soon before the Fukushima disaster occurred and the Qidenus management did not want to endanger in any way the heath of their employees and therefore cancelled the event organized with the Japanese partners. This was never forgiven by the Japanese company, who considered that Qidenus did not fulfil with its obligation.

Figure 26: Religions all around the World in Percentages



Source: <http://www.indexmundi.com/world/religions.html>

The graphical representation clearly shows the importance and the spread of the different religions all around the world. The religious characteristics have to be carefully analyzed and the sales and marketing strategies have to be adapted to the particularities of each belief, otherwise it might lead to a negative development of the business relations. Just by taking all this aspects into consideration can a company perform successfully on the world market.

**H6 Confirmed.** *Religion and customs have a fundamental role on the positive or negative development of business relations.*

#### 4.7.4.1 High and Low context Cultures

The anthropologist, Eduard Hall distinguishes between high and low context cultures (cp.[Czinkota and Ronkainen 2004, p.59]), and describes them according to the following components: associations, interaction, territoriality, temporality and learning.

*Figure 27: High and Low Context Cultures*

Factor	High-context culture	Low-context culture
Overtness of messages	Many covert and implicit messages, with use of metaphor and reading between the lines.	Many overt and explicit messages that are simple and clear.
Locus of control and attribution for failure	Inner locus of control and personal acceptance for failure	Outer locus of control and blame of others for failure
Use of non-verbal communication	Much nonverbal communication	More focus on verbal communication than body language
Expression of reaction	Reserved, inward reactions	Visible, external, outward reaction
Cohesion and separation of groups	Strong distinction between ingroup and outgroup. Strong sense of family.	Flexible and open grouping patterns, changing as needed
People bonds	Strong people bonds with affiliation to family and community	Fragile bonds between people with little sense of loyalty.
Level of commitment to relationships	High commitment to long-term relationships. Relationship more important than task.	Low commitment to relationship. Task more important than relationships.
Flexibility of time	Time is open and flexible. Process is more important than product	Time is highly organized. Product is more important than process

Source: <http://pm440.pbworks.com/f/1289159817/Hall%20High%20Low%20Context.JPG>

Countries with low context are: Australia, United Kingdom, Germany, United States, Finland etc, while countries with high context are African Countries, Arab Countries, Latin America, Russia and China. The low and high context culture theory can be applied and exemplified through the internationalization process of Qidenus Technologies.

The process started by entering the low context markets similar to the home market: Austria such as Germany, United Kingdom, Finland etc. The relationships are strictly business oriented and do not have to continue necessarily after the end of the business. Qidenus however, due to the industrial products sold is forced to maintain a long term relationship with the customer and support him even after the actual selling process has been closed. The contracts and collaborations are based on clear rules and procedures which are not deviated from. In the projects, the purchase decision power is usually the responsibility of more than one person, each interested in the fulfilment of the requirements of his own department.

The interaction within the low context cultures was done directly and clearly, without indirect suggestions. In such countries usually even before a digitisation project starts the requirements are clear and are communicated to the manufacturers. There is little space of guiding the potential clients and inducing them the solicitations they should have. Unlike the high context cultures the negotiations are coldly managed without interfering in the conversations with each others private sphere.

Cost efficiency and a good time management are highly appreciated while delays are considered to be unprofessional and associated with lack of reliability. A delivery delay in Germany has to be handled carefully with the necessary apologies or if in is the case the requested financial delay compensations. During the training session after the installations of the equipments at the customer's site, our technical experts have to consider the learning and teaching methods of each culture. In these low context countries explicit and clear instructions and explanations have to be given, any theory concept has to be explained through a practical application in order to achieve a good understanding. A culturally individualized training session spares Qidenus an intensive guidance process throughout the project and permits customers to independently monitor and maintain the equipment.



On the other hand, the internationalization process and implicitly the network building and sales process is much differently in high end cultures such as Latin America, Arab Countries or China. The relationship building involves the investment of a lot of time for professional but also for personal discussions which are not at all connected with the topic on hand. Closing a successful deal in Ecuador for example took 4 months and it is one of the fastest projects developed in the region. In these four months personal phone calls had to be done at least 3-4 times a week in order to maintain the motivation of the partners and increase the success chances. The partners were confronted with budget restrictions constantly, due to the unstable political environment, therefore Qidenus had to change the offer made to the Ecuador clients at least seven times, each time trying to improve the conditions, offer a higher discount and a better service package.

The decision making in the high context countries is usually the responsibility of one single person, who if guided properly will doubtlessly incline towards the product represented by the person he has formed the best relationship with. The relationship is in this case more important than the products itself. If the product presentation is based on honesty and sincere acknowledgement of advantages and disadvantages, the equipment will be preferred even if it would objectively be considered weaker in some aspects than the product of the competition. The attitude towards the customer or potential customer, respecting his values and business behaviour, while at the same time developing a personal connection by trying to diplomatically approach family and personal aspects, is fundamental.

A personal discussion or negotiation in high context cultures such as China, Brazil or the Arabic countries is carried out by using nonverbal elements such as gestures, facial expressions and by highlighting the tone of the voice in the relevant moments when an idea has to be accentuated. The actual information to be transmitted is compared to the low context countries implicit, because the context and the people are more relevant than the actual message. The difficult part is that a conflict can not be solved as easily as in the low context cultures, where a simple solution of the problem for example the costless reparation of the book scanner is enough. A Latin American Partner or Customer might feel personally hurt if the equipment, due to some reasons, does not fulfil the expectations. Pragmatically solving the problem through some technical adjustment is not enough,

personal contact is needed and a constant discussion path with explanations and apologies has to be conducted until the lost base of trust can be recreated.

As an Austrian company and clear representative of the low context cultures, Qidenus had a difficult time adjusting to the time perception of for example the Latin American customers. Projects are being constantly delayed and postponed, therefore enabling an unstable planning basis for Qidenus in that specific region. Patience and understanding the culturally dependent time perceptions for projects, meetings or communication response, is a key factor to successfully conducting business in these high context regions. In Peru for example Qidenus is working on a project since May, time in which not only the project requirements changed constantly, but also the submission deadline for the tender has been moved from beginning of June to August.

In Ethiopia after a long process of tender guidance for 1 year, the verdict was that the particular customer does not have the necessary budget, although initially this was not the case. This project took Qidenus weeks of work and preparation, offers and equipment presentation and it ended abruptly with a negative result. However, these are learning experiences for the company who is now trying to more efficiently allocate its time and resources, by still adjusting to each region's cultural environment. The usual training session of operators and technicians of the partner or client, organized after the installation of the book scanner, are structured according to the customer's particularities. In Chile for example various trainings and demonstrations have been made by first theoretically presenting the machine. The observation capacity is an important learning factor in these cultures which prefer to try something after the entire process has been shown in detail. Multiple sources of information have to be used in order to enhance the people's function to connect and synthesize information. As in the low context cultures a well guided learning process of the customers is highly appreciated and prove to be less cost intensive concerning the technical support and machine service.

The analysis and the case studies conducted above underline the fact that business has to be adapted according to the type of context culture one is dealing with: high or low doubtlessly confirming H7.

*H7 Confirmed. In order to achieve the expected results, business has to be conducted differently in low and in high context cultures.*

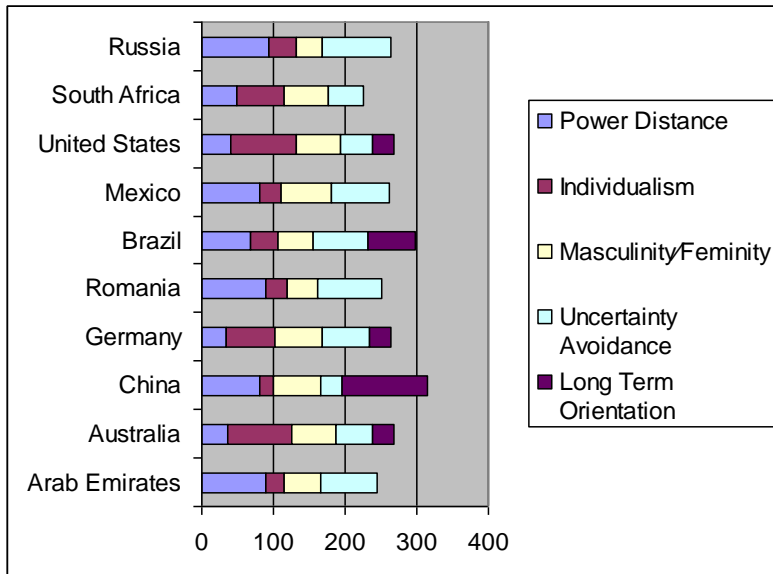
Adjusting and adapting to the different types of cultures, with their specific needs, behaviour, values and perceptions has given the Qidenus company the international inside character and culture it possesses today.

#### **4.7.4.2 The Hofstede Cultural Dimensions**

One of the most important attempts to identify cultural differences in order to better adapt the corporate development strategies has been performed by Hofstede in 1983. His research question was based on the different reactions of employees of IBM all around the world to motivation factors. In order to achieve accurate results, Hofstede used the IBM database and managed to obtain 116000 completed questionnaires from 72 countries in 20 languages.(cp.[Hofstede 2001,p.41])

The analysis showed that persons worldwide are guided by the following five dimensions: power distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity and time perception.(cp.[Hofstede 2001, pp.41-351])

Figure 28: Hofstede's Cultural Dimensions – Country Scores



Source: Personally created graph according to data from <http://geert-hofstede.com/countries.html>

For the practical analysis of the Hofstede theory, different countries from the relevant internationalization regions have been selected: Germany and Romania from Europe, one representing the Western one the Eastern block, the United States and Russia, as some of the most powerful economical forces, Mexico representing Latin America, Brazil as the only market in South America having a significantly different trend compared to the others, China and Australia as representatives of the Asia Pacific Region, the Arab Emirates as a pole of orientation for the Arab World and South Africa giving a slight overview on the African culture.

The first Hofstede dimension relates to the power distance. (cp.[Hofstede 2001,p.79]) The dimension is based on the way in which the society manages and perceives the inequalities among people. The societies with high power distance accept the hierarchical structure without protest, while countries with low power distance the society members aim a fair distribution of power and resources. (cp.[Hennessey, Jeannet and Gilepsie 2004, p.67]) The scores on power distance represent the cultural attitude towards hierarchies and concentration of the decision power. As expected the Arab Emirates have a high score in power distance, showing that status in the working environment and the hierarchical

structure is very important. Wealth and profession are a key point of status and non homogeneity of the society as well. Qidenus has been slowly gathering more and more experience in the Arab World by working intensively in Dubai, Saudi Arabia, Qatar, Kuwait and Oman, and the perception was that the decision power was concentrated in the hands of few.

Russia follows closely, an expected result as well, due to the unequal distribution of wealth and the strong correlation between wealth and power. The communistic background also imposes strict rules regarding respect and hierarchies, fact which accentuates the power distance in the working environment and outside.

The surprise regarding the power distance score is given by Romania, because as part of the European Union it should have slowly adapted to the implicit behavioural attitudes and perceptions, however, the mark of communism, which finished with the revolution in 1989 has left serious marks. There is still a tremendous difference in the income structure of different state structures, and the middle class is not as well represented as in other European countries. From the Qidenus experience with Romania, it must be said that connections of the partner company in the political environment would prove to be highly beneficial for the activity and sales increasing in the region.

As in Russia there are few people decided the destinies of many and guided the biggest projects. China, Mexico and Brazil also scored high in power distance, typically for societies where the political and economical characteristics play such an important part in building a good market position. In China for example the Qidenus Partners works on a project at a vital Chinese institution, and if it is successful, Qidenus will have open doors towards China. Western countries and Australia, with an already longer democracy history have low power distance scores, accentuating the fact that equality is aimed, and that hierarchies do not play such an important role.

Individualistic societies are characterized by responsibility towards themselves and their closest family members, while collectivistic societies rely on solidarity and responsibility towards the entire community. *„In collectivistic societies, the good of the group prevails over the good of the individual, however collectivistic societies tend to be more suspicious*

*of outsiders, whereas individualistic societies are more welcoming of them.*” [Hennessey, Jeannet and Gilepsie 2004, pp.67-68] The dependency level in collectivistic societies is very high, as group members are expected to help one another. Deviations from the group’s behaviour rules, beliefs and principles are negatively perceived by society. (cp.[Hennessey, Jeannet and Gilepsie 2004, p.68]) The high score in individualism is usually a characteristic of Western civilizations, such as the United States, Germany, France, Australia, because these societies have first of all not the collectivistic background provided by the communist model and they are strongly focused on achieving success through an independent self relying behavioural path: Helping each other and a strong team spirit is much more difficult to cultivate than in the former collectivistic societies. Qidenus is confronted with this aspect on these markets, but manages this perfectly due to the similarity between the home markets and foreign markets. The lowest scores in individualism are found in China due to the accentuated communist belief, in the Arab world, Romania, Brazil and Mexico.

The masculinity feature is purely concentrate on achievement of targets and goals, success, efficiency and competitiveness, while femininity focuses on cooperation in the work environment, on the well being, satisfaction and motivation of the employees.(cp.[Hennessey, Jeannet and Gilepsie 2004, p.68]) In a feminine culture the process and the consensus and the path are more important than the actual results. Strong masculine countries are Mexico, United States and Australia. Qidenus has been working on all these markets for some time now, but did not notice the lack of balance between these characteristic, therefore, this specific example supports the Hofstede theory criticism that the theory might be deterministic and relate strictly to the IBM environment.

Both in Mexico and in Australia, the experience of Qidenus was that the approach and relation building, in one word the actual process of getting familiar with the partner’s or client’s needs and requirements, being understanding and as technologically supportive as possible, leads to a higher satisfaction than strictly following the masculine values. With the United States, it is difficult to draw a conclusion, because the partner a very large company has not been heavily focusing on promoting the Qidenus products, so that a clear observation during a negotiation process can be undergone. The countries with the lowest

scores in masculinity are Russia, Romania and Brazil showing that in these countries both the feminine and masculine features play an important role in the success rate.

The uncertainty avoidance dimension relates to the reaction and dealing with unpredictable situations.(cp. [Hennessey, Jeannet and Gilepsie 2004, p.67]) Countries with high uncertainty avoidance try to avoid as much as possible unexpected situations, because they have difficulties in reacting properly and handling them appropriately. These could be due to the lack of sufficient qualified resources or due to the mentality. If we closely regard the countries with high uncertainty avoidance such as Romania, Arab Emirates, Russia, Mexico and Brazil, we notice that the majority of them scored low in the individualist dimension, meaning that they are used to work in defined teams, where the processes are structured and nothing unpredictable comes to destroy the created work harmony.

These structures have also a political background especially in Russia and Romania. Qidenus has been experiencing this characteristic in Romania, where the Italian partner has a daughter company. The Italian partner told Qidenus that at the beginning supervision and constant questions were necessary, because the people lacked the ability to decide on their own and confront appropriately the constantly changing market. In time however, this aspect changed and especially the young generation manages the uncertainty better than the previous generation, who was submitted to a historical handicap. The lowest uncertainty avoidance levels are found in the United States and China.

The United States low uncertainty avoidance level was expected due to the strict correlation with the other dimensions, the country values and general behaviour. China is however a surprise, because generally a communist society is expected to be structured firmly and an unpredictability factor creates confusion and lack of orientation. China seems according to Hofstede to have found the way to deal with uncertainty due to the growing commercial relations with other countries. Another reason of this result might be the deterministic approach of Hofstede, as mentioned before, since the research was conducted exclusively in the IBM environment, an international environment with possibly much more different company culture and strategy orientation than the normal Chinese firms.

The long term orientation is characterized by a relativity perception of truth according to context and situations, compared to short term oriented societies where the values are perceived as absolute. Societies with long term orientation are able to adapt constantly to the world's changing conditions and focus on achieving the aimed results. On the other hand, the short term oriented societies put a high value on traditions, have a tendency to be inflexible and struggle to obtain rapid results.

The time perspective, more specifically the long term orientation dimension has been tested just in some of the analyzed countries. The results show a high score in long term orientation for China, Brazil and a moderate long term orientation in the United States, Australia and Germany. China's long term policies within their companies is long term, because these society types believe in planning and structures as a way of obtaining the desired result. The economic strength of the United States, Australia and Germany could not be achieved, if the orientation would be short term.

Qidenus was confronted with the time orientation perspective, especially in Germany and Australia, where large scale digitisation projects are planned with years in advance and have to be guided all through. Brazil is one of the South American countries with the highest level of development potential, therefore acknowledging their strengths they invest resources in thoroughly planning further steps benefitting from the encouraging market situation. The Qidenus Partner in Brazil has just purchased one book scanner and is already working on various other projects for next year.

Hofstede's dimensions and registered dimension score per country give a summarized overview on the general particularities of each country, recommended approach methods and way to conduct business by adapting accordingly. Should these cultural characteristics not be considered, there is a higher probability of market failure, hereby confirming H8.

***H8 Confirmed.*** Hofstede's dimensions and the scores of each country should be taken as a cultural basis when developing the internationalization strategy from the socio cultural point of view, otherwise the probability of a market failure will increase.



Although all cultural theories, explaining the characteristics of each culture face limitations, both the concepts of Eduard Hall and Hofstede offer a general perspective upon the different cultural types and act as guidelines for constructing the internationalization strategy and approach for companies such as Qidenus Technologies from the socio-cultural point of view.

The confirmed hypotheses relying on the assumptions regarding the political, economical and socio cultural factors, but also the cases illustrated throughout the chapter enhance the idea that a successful internationalization strategy has to consider both the current status , but also the dynamics of the political, economical, socio-demographical and cultural influence factors in the foreign markets, confirming H1.

***H1 Confirmed.*** *A successful internationalization strategy has to consider the status and the developments of the economic, social, political and cultural factors in the target market.*

The market specific hypotheses have been evaluated by considering aspects from all the analyzed comparative indicators and the following results have been registered:

***H9 Confirmed.*** *South Eastern Europe consists of emerging markets, which have a large development potential in the next years and should be considered an internationalization priority.*

South Eastern Europe is from the point of view of all indicators composed of emerging markets and an even higher resource commitment is recommended in these regions. A clear example is Romania, who will be benefitting in 2014 from European funding for the development of educational infrastructure. The main libraries and public institutions will be encouraged to increase the level of digital content and available online information through digitization. This process requires both from Qidenus side, both also from the local distributor's side a thorough market preparation.

***H10 Confirmed.*** *The Middle East is difficult to approach from Western Europe due to the socio-cultural differences, therefore a local distributor will contribute significantly to the regional sales development.*

Before managing to build a consistent partner network in the Middle East Qidenus did not manage to internationalize successfully in the Middle East. After the professional partnership closing with various important companies from the region, the first projects started to be closed and many more to be approached. A local distributor due to the proximity, but also due to the large psychic distance is of significant value in enlarging the regional sales structure.

***H11 Rejected.** The Asia Pacific Region is economically and technologically highly developed, which reflects in their current status in the digitization sector.*

Based on the Qidenus experience, the Asia Pacific Region is in spite of its economical and technological status, in a start up phase regarding the digitization sector. This reflects significantly in markets such as China, Australia, Singapore, South Korea.

***H12 Rejected.** The United States, one of the most advanced countries in the digitization field, is therefore be one of the country's with the largest number of Qidenus' customers.*

The United States is without any doubt among the pioneers of digitization and is putting a lot of effort in preserving the valuable information and making it available digitally. The country is however not the country with the largest number of Qidenus' customers, in fact it has comparatively low sales results compared to Europe or even the developing South America. This is due to a poor marketing effort from the local distributor's side, but who is now after various sales training motivated to successfully promote the Qidenus book scanners and build the market further with important reference customers.

***H13 Rejected.** Mexico is in a difficult political and economical position at the moment and can therefore not invest in high quality industrial digitization equipment such as Qidenus.*

Mexico is at the moment in a difficult economical position, the Qidenus' partner company managed however to invest in the last 2 years in two book scanners: a Robotic and a Mastered System, with which they are digitizing the materials from the Civil and Property Registries in the different Mexican states.

***H14 Confirmed.*** *South America is in a development phase what digitization is concerned and this is proved in the ongoing and closed projects.*

The hypothesis is confirmed by the current status of sales in South America: an equipment has been sold in Chile, two equipments were shipped to Ecuador, one equipment was sold in Brazil. Moreover, ongoing projects are approached through the newly developed distribution partner network in the region.

***H15 Confirmed.*** *The internationalization influence factors can not be perceived separately on the global markets, all factors have to be combined and evaluated as a whole market dynamic prior to the internationalization process, otherwise errors which negatively impact the company, will occur.*

A combined, structured analysis of all above stated influence factors: economical, social, political, cultural plus unpredictable variables has to be considered and jointly evaluated as a complex market dynamic, in order to conduct a internationalization process with higher success rate probability and positive business development.

## Conclusion

The global born companies are becoming a more and more frequent phenomenon. Companies are forced to internationalize from the early beginnings in order to survive or to maintain and develop their market position. Many times, they do not have the luxury of a thorough preparation and analysis beforehand, fact which leads to a market knowledge and strategy development also simultaneously with the growing internationalization level.

The globalization and technological progress has however facilitated the communication process, the commerce and the access to different relevant resources such as financial, human resources, information, studies and data in regards to specific markets which act as basic guideline for the global born companies when taking the internationalization path.

Qidenus Technologies, the Viennese manufacturer of automatic, semi automatic and manual book scanners has taken advantage of the international context and of the innovative technology produced in order to market its unique products worldwide.

The challenges and opportunities they faced on their way were mainly the consequence of the political, economical, socio-demographic and cultural factors in the foreign markets. In order to get a broader perspective on the world market, a comparison of the internalization strategies based on the various influence factors, has been made between the following regions: Western Europe and Eastern Europe, the Asia-Pacific Region, Africa and North-, Middle- and South America.

The political factors always play a decisive part in the internationalization process and can fundamentally influence the success or the failure on the foreign market. Qidenus Technologies has tried along the years to gather information about the relevant local content laws, the government budget policies related to the educational infrastructure and the relationship with the European Union or international associations as far as funding allocations for digitization projects is concerned.

Potential operating risks, business relations and the historical background of the home country Austria with the foreign country, as well as the overall political instability index have to be considered when starting operations abroad. The degree of government market control, including taxation, trade and non trade barriers is always carefully analyzed with

the local distributors, so that an effective individualized internationalization strategy can be implemented.

The economic factors are directly correlated with the specific market potential. Qidenus Technologies, as a manufacturer of highly innovative technological products has to be aware that the heterogeneity of the world's financial situation, should determine them to position themselves differently product- and pricewise in the various world regions in order to maintain their profitability and their global presence.

Particular economic indicators such as public spending for education as a percentage of the GDP or statistical data of libraries worldwide, including number of libraries, volumes and expenditures for the library's infrastructure, provide Qidenus with an overview on the internationalization priority level they should associate with different regions.

As a direct consequence of the economic status of the country, the technological development illustrates the potential demand for digitization as a source of increasing the access to online information. For obtaining a relevant status quo on the matter, the following indicators illustrating the situations worldwide are combined by Qidenus Technologies: households with a computer, households with internet access at home and percentage of individuals actually using the internet. The results offer an aid in the resulting internationalization strategy plan.

Being globally active, Qidenus Technologies has been trying to strongly consider the socio-cultural particularities of each region they are operating on as one of the keys of success. As a starting point of understanding the culture and the mentality of the foreign countries, the Low and High Context Cultures Theory of Eduard Hall, but also the five dimensions of Hofstede with the specific scores in each analyzed country, have been taken into account. The theoretical knowledge has been further on enhanced by the practical experience cumulated through increasing the commitment and activity on the foreign markets.

Based on the combined analysis of the above mentioned factors, Qidenus has been able to structure and adapt its internationalization strategies in order to avoid as much as possible negative influences on the existing international business development. Success was

achieved in the majority of the cases, however, in some regions due to unpredictable circumstances obstacles had to be overcome so that a fruitful continuation of the commerce could be accomplished.

Due to its unique revolutionary technology and its constantly growing product portfolio, Qidenus Technologies managed to increase its presence internationally by becoming one of the main players on the digitization market. Their goal and defined mission “Preserving the Past for the Future” clearly illustrates the considerable role the company is playing in the conservation of cultural heritage in digital form and increasing the availability of valuable information worldwide. This important commitment and responsibility Qidenus has taken towards the world, through providing the best technology for the cultural heritage conservation, is their source of motivation and continuous development. They are more than an internationally active company, they are one of the engines of global progress.

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## **Appendix 1: Short Summary of the Master Thesis in German**

Der Internationalisierungsprozess der Global Born Unternehmen wurde in den letzten Jahren von Wissenschaftlern gründlich beobachtet und analysiert. Die Vorgehensweise und die Internationalisierungsstrategien der Global Born Unternehmen weichen fundamental von den traditionellen Internationalisierungstheorien ab, Schlussfolgerung, die zu einer immer ausführlichen Analyse dieser Unternehmensarten und ihrer einzigartigen Eigenschaften beigetragen hat.

Um meinen Beitrag zu dieser Recherche und Analyse zu leisten, habe ich im Rahmen meiner Masterarbeit die Internationalisierungsstrategien, beziehungsweise die Chancen und Schwierigkeiten, die der österreichische Buchscannerhersteller Qidenu Technologies auf seinem Internationalisierungsweg zugekommen ist analysiert. Die Studie umfasst einen kurzen Überblick auf den existierenden Internationalisierungstheorien, auf den spezifischen Eigenschaften der Global Born Unternehmen und den Einfluss auf ihre Internationalisierungsstrategie.

Da die praktische Analyse auf der Erfahrung von dem Unternehmen Qidenu Technologies beruht, wird in erster Reihe ein Unternehmensprofil dargestellt. Um das Unternehmen übersichtlich auf dem Markt zu positionieren wird eine SWOT Analyse durchgeführt und mit einer Markt- und Wettbewerbsanalyse verbunden. Der gegenwärtige Unternehmensstatus wird durch die Darstellung des Marketing Mix erläutert: Produkt, Preis, Distribution, Promotion und Positionierung.

Als ein Vertreter der Global Born Unternehmen, ist Qidenu Technologies den Internationalisierungsweg von Anfang an gegangen und musste dementsprechend unterschiedliche Hindernisse überwinden, aber auch verschiedene Chancen ausnutzen. Die Faktoren die einen wichtigen Einfluss auf der internationalen Entwicklung des Unternehmens hatten, haben einen politischen, ökonomischen und sozio-kulturellen Hintergrund. Um einen besseren Überblick zu haben, welche Faktoren in welchen Regionen einen negativen oder einen positiven Einfluss gehabt haben, werden folgende Regionen verglichen: West- und Osteuropa, der Nahe Osten, die Region Asien-Pazifik, Afrika, Nord-, Mittel- und Südamerika.

Die politischen Faktoren spielen eine entscheidende Rolle im Digitalisierungsprozess und können entscheidend zum Markterfolg oder zum Marktversagen beitragen. Qidenus Technologies hat im Laufe der Jahre versucht, Informationen über die relevanten lokalen Gesetze, die Haushaltspolitik der Regierung im Zusammenhang mit der Bildungsinfrastruktur und die Beziehung mit der Europäischen Union oder internationale Verbände, die Finanzierung für potentielle Digitalisierungsprojekte ermöglichen können, zu sammeln.

Potentielle operative Risiken, Geschäftsbeziehungen und der historische Hintergrund des Heimatlandes Österreich mit dem potentiellen Markt, sowie der allgemeine politische Instabilitätsindex, müssen vor dem Start des Internationalisierungsprozesses in Betracht genommen werden. Der Kontrollgrad der Regierung auf dem Markt, einschließlich Besteuerung, Handel und Handelshemmnisse müssen immer sorgfältig mit den lokalen Distributoren analysiert werden, so dass eine effektive individualisierte Internationalisierungsstrategie marktspezifisch umgesetzt werden kann.

Die wirtschaftlichen Einflussfaktoren sind direkt mit dem spezifischen Marktpotenzial korreliert. Qidenus Technologies als Hersteller von hoch innovativen technologischen Produkten muss sich bewusst sein, dass die Heterogenität der weltweit finanziellen Situation, dazu beiträgt, dass sie sich preislich und produktmässig unterschiedlich in den verschiedenen Regionen der Welt positionieren müssen. Nur auf dieser Art und Weise können sie ihre globale Präsenz und ihre Rentabilität aufrecht erhalten.

Spezifische wirtschaftliche Indikatoren wie die öffentlichen Ausgaben für Bildung als Prozent des Bruttoinlandsprodukts oder die statistischen Daten von Bibliotheken weltweit, einschließlich Anzahl der Bibliotheken, Anzahl der Bücher und die Ausgaben für die Bibliothekinfrastruktur, gewähren Qidenus einen Überblick über die Internationalisierungsprioritätsstufe, die sie mit verschiedenen Regionen assoziieren sollten.

Als globales Unternehmen, hat Qidenus Technologies versucht, die sozio-kulturellen Besonderheiten jeder Region im Internationalisierungsprozess zu integrieren. Als Ausgangspunkt für das Verständnis der Kultur und der Mentalität der potentiellen Märkte wurden die“ Low-und High Context Cultures“ Theorie von Eduard Hall und die fünf Dimensionen von Hofstede berücksichtigt. Die theoretisch erworbenen Informationen wurden weiter durch die praktische Internationalisierungserfahrung ergänzt.

Aufgrund einer kombinierten Analyse der oben genannten Faktoren hat Qidenu seine Internationalisierungsstrategien marktspezifisch angepasst, um negative Einflüsse auf die Marktentwicklung zu vermeiden. Obwohl die Strategie in den meisten Fällen erfolgreich war, mussten in manchen Regionen viele Hindernisse überwunden werden, so dass der Internationalisierungsprozess uneingeschränkt weiterentwickelt werden kann.

Aufgrund der einzigartigen revolutionären Technologie und des stetig wachsenden Produktportfolios hat es Qidenu Technologies geschafft, seine Präsenz international zu erhöhen und zählt zur Zeit zu den wichtigsten Unternehmen im Bereich Digitalisierung und Buchscannerherstellung weltweit.

Die Mission des Unternehmens " Die Aufbewahrung der Vergangenheit für die Zukunft " zeigt deutlich die wichtige Rolle, die das Unternehmen in der Erhaltung des kulturellen Erbes in digitaler Form und in der Erhöhung der Verfügbarkeit von wertvollen Informationen spielt. Diese wichtige Verantwortung, die Qidenu durch die Bereitstellung der besten Technologie für die Erhaltung des kulturellen Erbes gegenüber der Welt übernommen hat, ist ihre Motivations- und Energiequelle für die kontinuierliche Entwicklung. Qidenu Technologies ist dementsprechend mehr als ein international tätiges Unternehmen, Qidenu ist ein Motor des globalen Fortschritts.



## Appendix 2: Curriculum Vitae Andreea Raluca Stoica

### Curriculum Vitae

ANDREEA RALUCA STOICA

E-mail: andre\_stoical@yahoo.com



#### WORK EXPERIENCE:

04.07.2011- Present

**Key Account Manager at Qidenus Technologies GmbH Vienna** (Manufacturer of fully automatic, semi-automatic and manual book scanners)

##### Main Responsibilities:

- Coordination of marketing campaigns
- Design and structure of promotional materials
- Preparation of case studies
- Complete development responsibility for the following markets: South America and Middle America, South-Eastern Europe, Australia consisting of
  - Research
  - Partner and Potential Customer Search
  - Cooperation Contracts
  - Sales Negotiations directly or through videoconferences
  - Offer preparation
  - Guidance of the sales process
  - Long term support of partners and customers
- Participation at the most important technology fairs such as CEBIT in Germany or ALIA in Australia
- High involvement in the development of other world regions such as: North America, Asia and Africa

28.09.2009-18.02.2011      **Service Contract Administration Analyst at Wipro Technologies Romania in the Carestream Project (former medical department of Kodak)**

**Main Activities:**

- Preparation of offers and contracts
- Status check and update of already existing contracts
- Renewal of contracts in all the work systems (SAP, Imos, Scan, Sales Force)
- Invoicing according to the contract specifications
- Solving of all the verbal or written complaints of all customers: State and private hospitals of Austria, Germany and Switzerland)
- Process improvement proposals and strategies were constantly evaluated and implemented

**EDUCATION:**

01.03.2011-Present      **University of Vienna, Austria**  
Master in International Business Administration, Faculty of Business Administration, Specialization International Marketing& International Management (courses completed, Master thesis on the topic „Internationalization of Global Born Companies: Challenges and Opportunities-Qidenus Technologies GmbH“, will be finalized in November 2013)

12.10.2009-06.07.2011      **Academy of Economic Studies Bucharest, Romania**  
Master at the Faculty of Business Administration  
(all courses were held in German)

01.10.2008-30.01.2009      **Vienna University of Economics and Business, Austria**  
International Exchange Program based on an Erasmus Scholarship

09.2006 – 07.2009      **Academy of Economic Studies Bucharest, Romania**  
Bachelor at the Faculty of Business Administration  
(all courses were held in German)

09.2002 – 07.2006      **“Moise Nicoara” Highschool Arad, Romania**  
Specialization: Mathematics-Informatics-English

09.1998 – 07.2002      **“A.M. Guttenbrunn” School Arad, Romania.**  
( All classes were held in German)

## **COMPETITIONS AND PRIZES:**

### National Level:

- 2006 Participation at the National German Language Competition
- 2005 2-ter Prize at the National German Language Competition
- 2004 5th Place at the National German Language Competition
- 2003 2-ter Prize at National German Language Competition

### Regional Level:

- 2006 1st Prize at the "Poetry and Musical Festival" , organized by the "Moise Nicoara" Highschool in the Sections: Translation and Composing
- 2006 Co-author of the book: "Intinde-ti o mâna de ajutor" (Please Offer Your Help"- dedicated to people with special needs)

## **DIPLOMAS AND CERTIFICATES:**

Cambridge Certificate of Advanced English (CAE)  
Austrian Language Certificate (Österreichisches Sprachdiplom) – Level C1  
German as a Foreign Language Certificate (DAF Certificate)  
Certificate for Professional Competences English  
Certificate for Professional Competences Informatics

## **COMPUTER SKILLS:**

Operational Systems: Windows (2000, 2003, XP)  
Office: Word, Excel, Outlook, PowerPoint  
Internet: Internet Explorer, Firefox, Google Chrome  
Programs: SAP, Imos, Scan, Sales Force, SPSS

## **FOREIGN LANGUAGES:**

English: advanced  
German: advanced  
Romanian: native speaker  
Spanish: advanced  
Italian: beginner  
Slovak: beginner


**SOCIAL ABILITIES AND COMPETENCES:**

- Teamwork: I worked in teams at the university and in high school, mostly in extracurricular projects, where I had the opportunity to start developing more my social skills ( 2003 – Participation in the Organization of the "Youth Parliament")
- Communication: Excellent Communication and Oratorical Talent  
I was a member of the academic debate team (public debates: „The People Speak", inter-ethnic debate: "From your perspective"- where we managed to obtain the 2<sup>nd</sup> price
- Fast Learning Capacity: I am able to rapidly absorb new information and technologies.
- Adaptability: I am able to manage successfully stressful situations.

**OTHERS:**



- Hobbies: Literature, Psychology, Philosophy, Travelling, History, Music, Sport
- Driver's license: B
- References: Dragos Ionut Marin- Project Manager Carestream Romania  
Loredana Cristina Marian-Cluster Coordinator Service Contract Administration Carestream Romania

## Appendix 3: Technical Specification Sheet Qidenus Robotic Book Scan 3.0

  
QIDENUS TECHNOLOGIES

Qidenus' further development of it's full automated system:

### ROBOTIC Book Scan 3.0

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**ROBOTIC book scan**  
market leading device  
max. cycle speed: 2,500 pages/hour

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**[def.: robotic book scanner]**  
This robotic book scanner is a high-speed scanning machine digitising any bound material automated, fast and in result economically. The machine is based on a worldwide patented turning technique [bionic finger system], a unique single page control [light transmittance instrument] and a V-Shape book cradle, capturing the pages with full format digital cameras. The 3in1 machine with its integrated manual modes allows to process any document in matching dimension.

#### KEY FEATURES

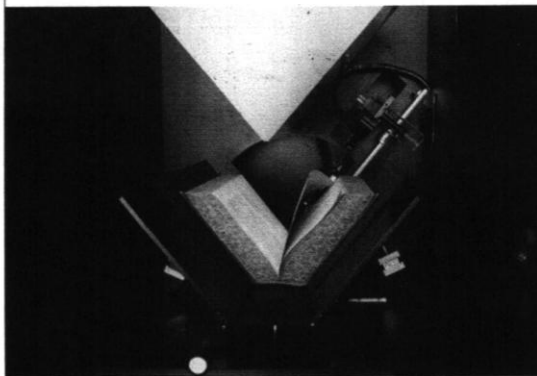
- Patented turning mechanism → Bionic Finger
- Efficient single page control instrument
- Industrial SPS electronic control system
- Gentle & automated 80° book cradle
- Curvature free scanning due to glassplate
- Dual DSLR Camera System [36MPiX – 72MPiX]
- Intelligent SW Suite for capturing, post-production & workflow-control
- Table Top Machine: compact, portable, easy set-up, intuitive operation
- 2 models: A3+ // A2

Qidenus Technologies GmbH  
A- 1210 Vienna, Austria | Floridusgasse 50/3 | phone: +43 1 2362 433  
FN 259187 h | HG Wien | UID: ATU62171919

[www.qidenus.com](http://www.qidenus.com)



<b>Max. Cycle Speed</b> <b>2,500</b> pages/hour	<b>Operating Modes</b> automatic / semi automatic* / manual
<b>Electronic Control System</b> Beckhoff SPS electronics & security system	<b>Lighting System</b> high-end LED cold light
<b>A3+ Model</b> max. book size: 56cm x 37cm (per page 28cm x 37cm) max. book thickness: 12 cm image resolution: 300ppi // 400ppi ** dimensions / weight: 67cm x 72cm x 95cm / 72 kg	<b>A2 Model</b> max. book size: 60cm x 44cm (per page 30cm x 44cm) max. book thickness: 15cm image resolution: 300ppi // 400ppi ** dimensions / weight: 81cm x 78cm x 95cm / 78 kg
<b>Page Turning Security</b> the patented Bionic Finger system in correspondence with its unique single page control guarantees automated page separation & turning	<b>Complete Digitisation Process</b> the machine provides several functions to process the complete book in a single workflow, including digitisation of book covers, loose sheets & foldouts
<b>Book Cradle</b> book cradle system in gentle 80°	<b>Paper Weight &amp; Quality</b> 30 - 350 g/m <sup>2</sup> in all textures & qualities
<b>Image Formats</b> ao.: JPEG, TIFF, GIF, RAW, PDF, PDF OCR, XML;	<b>Color Tone</b> 24 bit color, 8 bit greyscale, 1 bit b/w
<b>Qidenus Software</b> comprehensive SW Suite for image processing, quality control, data conversion, workflow management & OCR***	<b>IT</b> integrated quadcore processing system for image capturing & batch processing, 4 TB internal storage system included
<b>Digital SLR Camera Systems</b> Canon DSLR 600D Canon DSLR 5D Mark II Nikon DSLR D800	<b>Optical Lens Systems</b> Sigma 28mm DG Makro Carl Zeiss 35mm Distagon T Carl Zeiss 50mm Makro Planar T
* unique semi-automatic mode, "no touch technology", controlled per light grid ** dependent on applied camera system *** OCR Licenses upon request to Qidenus Technologies or directly to ABBYY OCR // SHAKR OCR	

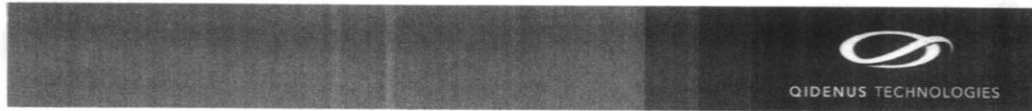


Since 2010 Qidenus Technologies is clear world market leader in V-shape Book Scanning  
 for further infos: [digitise@qidenus.com](mailto:digitise@qidenus.com)

[www.qidenus.com](http://www.qidenus.com)



## Appendix 4: Technical Specification Sheet Qidenus Mastered Book Scan 3.0



Qidenus' outstanding semi-automatic book scanner:

### **MASTERED Book Scan 3.0**

#### **MASTERED book scan**

max. cycle speed: 1,500 pages/hour

**most productive manual system in the market**

#### **[def.: semi automatic book scanner]**

This part automatised book scan system is a high speed scanning machine especially developed for large scale book digitisation. The machine uses a self-centering book cradle in combination with an automated glassplate, providing the operator with a fast and constant scanning rhythm. Compared to flat bed scanners such a device achieves much higher throughput by at the same time less stressing the material [80°angle] and far less operator's interaction [semi automatic].



#### **KEY FEATURES**

- Peak manual throughput
- Unique & fast operating per light grid
- Operator turns page - nothing else
- Automatised capturing, self centering book cradle
- Curvature-free scanning with OR without glassplate
- High-end LED lighting for constant illumination
- Compatible to all future camera developments
- 4 different models: A3+ // A2 // A2+ // A1

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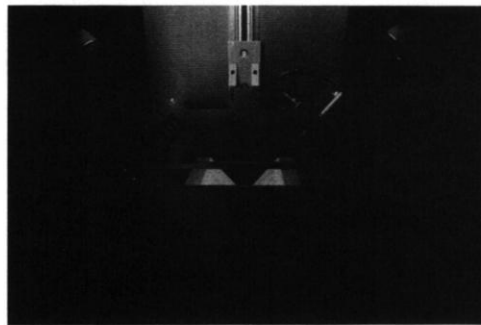
[www.qidenus.com](http://www.qidenus.com)



QIDENUS TECHNOLOGIES

<b>Max. Cycle Speed</b> 1,500 pages/hour	<b>Operating Modes</b> semi automatic & manual
<b>Semi Automat</b> unique – part automatised – speedy	<b>Lighting System</b> high-end LED cold light
<b>A3+ Model</b> max. book size: 56cm x 37cm (per page 28cm x37cm) max. book thickness: 12 cm image resolution: 300ppi // 400ppi *	<b>A2 Model</b> max. book size: 60cm x 44cm (per page 30cm x44cm) max. book thickness: 15cm image resolution: 300ppi // 400ppi *
<b>A2+ Model</b> max. book size: 64cm x 48cm (per page 32cm x48cm) max. book thickness: 15 cm image resolution: 300ppi // 400dpi *	<b>A1 Model</b> max. book size: 76cm x 58cm (per page 38cm x58cm) max. book thickness: 15cm image resolution: 250ppi // 300ppi *
<b>Book Cradle</b> gentle 80°	<b>Image Formats</b> ao.: JPEG, TIFF, GIF, RAW, PDF, PDF OCR, XML;
<b>Paper Weight &amp; Quality</b> no restrictions	<b>Color Tone</b> 24 bit color, 8 bit greyscale, 1 bit b/w
<b>Qidenus Software</b> comprehensive SW Suite for image processing, quality control, data conversion, workflow management & OCR**	<b>IT</b> integrated quadcore processing system for capturing & batch processing, 4 TB internal storage system included
<b>Digital Camera Systems</b> different Canon, Nikon & Hasselblad Cams integrated	<b>Optical Lens Systems</b> different Sigma, Carl Zeiss & Hasselblad Lenses integrated

Since 2010 Qidenus Technologies is clear world market leader in **V-Shape Book Scanning**  
for further infos: [digitise@qidenus.com](mailto:digitise@qidenus.com)



\* dependent on applied optical system

\*\* OCR Licenses upon request to Qidenus Technologies or directly to ABBYY OCR // Shkr OCR

[www.qidenus.com](http://www.qidenus.com)

Source: *Qidenus Technologies Technical Specification Sheet Mastered Book Scan 3.0 2013*



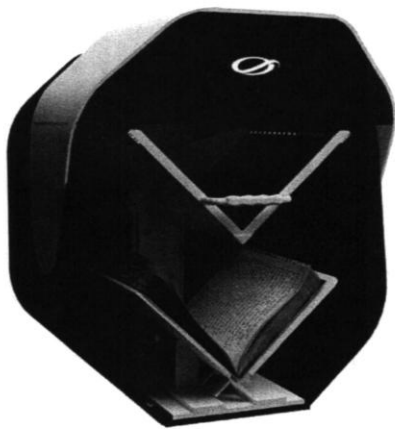
## Appendix 5: Technical Specification Sheet Qidenus Smart Book Scan 3.0



QIDENUS TECHNOLOGIES

Qidenus' latest evolution of its V-shape book scanner:

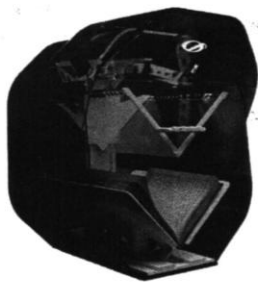
### SMART Book Scan 3.0



#### [ SMART book scan 3.0 ]

The capturing technology of latest CMOS sensors delivers outstanding image quality. The V-shape system in gentle 100° treats the inserted material and originals conservatively. The glassplate of special coated glass provides the operator with speed & ease in handling. The consequent system construction results in outstanding productivity for a manual system. Finally: innovative design.

That's what we call SMART book scan.



#### KEY FEATURES

- V-shape performance book scanner
- 100 degree gentle opening angle
- V-glassplate system
- CMOS sensors for exceptional image quality
- LED cold light for constant illumination
- Extensive SW Suite to capture & process
- Intuitive setup & operation
- 2 different models: A1 model / A2 model

**specifications:**

capturing technology	2 individual CMOS area sensors
sensor size - option1	2 x 18 million pixels ( total 36 mpix )
sensor size - option2	2 x 24 million pixels ( total 48 mpix )
sensor size - option3	2 x 36 million pixels ( total 72 mpix )
image resolution	300ppi - 600ppi
color tone	24 bit color, 8 bit greyscale, 1 bit b/w
max scan area A2	open book: 580mm x 440mm // per page: 290mm x 440mm
max scan area A1	open book: 820mm x 610mm // per page: 410mm x 610mm
max book thickness	160mm
bookcradle	V-shape 100°, adaptable
glassplate	V-shape real glass, 3mm, coated
lighting	LED cold light, constant illumination, no UV emission
software standard	QiScan standard: capturing, processing, easy touch operation, 5 image algorithms
software advanced	QiScan advanced: capturing, batch processing, workflow management, SQL DB, 25 image algorithms
file formats standard	TIFF, JPEG, PDF, OCR optional
file formats advanced	TIFF, JPEG, PDF, RAW, GIF, XML, singlepage or multipage, OCR runtime or OCR external
IT requirements	Windows 7 or higher, 4 GB RAM or higher, 100 GB disk space
dimensions	A2: 60cm deep, 98cm wide, 110cm high A1: 74cm deep, 98cm wide, 110cm high
weight	A2: 75.5 kg A1: 82.0 kg

## Appendix 6: References Qidenus Technologies



### Qidenus Performance Book Scanners

find following examples of important reference installations:

#### LIBRARIES & ARCHIVES:

Library of Alexandria	Egypt, Alexandria
King Faisal Doc Center	Kingdom of Saudi Arabia, Riyadh
National Library of UAE	UAE, Abu Dhabi
National Library of Turkey	Turkey, Ankara
National Library of Poland	Poland, Warsaw
National Library of Austria	Austria, Vienna
National Library of Norway	Norway, Oslo & Mo
Royal Library of Denmark	Denmark, Copenhagen
Royal Library of Belgium	Belgium, Brussels
National Library of Azerbaijan	Azerbaijan, Baku
National Library of Uzbekistan	Uzbekistan, Tashkent
Iowa State Transportation	USA, Iowa, Ames
State Library of Berlin	Germany, Berlin
University Library Heidelberg	Germany, Heidelberg
University La Sapienza Rome	Italy, Rome
University of Medicine Sofia	Bulgaria, Sofia
University of Medicine Bucharest	Romania, Bucharest

and many more ...

#### DIGITISATION SERVICE PROVIDER:

SIVAN Soluciones	Mexiko, Mexiko City
Crowley Imaging	USA, Maryland
China System Company	China, Beijing
Digital Microfilm Equipment	Australia, Perth
Numen Group / Diadeis	France, Paris
Imaging System Service	Italy, Milan
Content Conversion Specialists	Germany, Hamburg
Digital Center Poland	Poland, Poznan

and many more ...

Source: Qidenus Technologies Reference List 2013

# Appendix 7: Qidenus Technologies Unique Technology Features



## Unique Technology Features

### Robotic Book Scan System 3.0

- **Page Turning Intelligence:** the world wide patented pressure controlled bionic finger
- **Integrated Double Page Control:** the light density of every single page is measured
- **3 in 1 Scanning Solution:** automatically, semi - automatically and manually
- **V-shaped 80 degrees Book Cradle:** horizontally and vertically flexible, soft spine support, adjustable to all book types



### Mastered Book Scan System 3.0

- **High Speed Digitisation:** the fastest and most efficient way to scan manually
- **Easy Operation:** self explanatory user interface-containing just 3 buttons
- **Special Glass Plate** in order to increase the image quality and achieve curvature free output with no effort
- **Professional High Quality Optical Solution**

### Smart Book Scan System 3.0

- **The most revolutionary manual book scanner with a V-shaped gentle 100 degree book cradle:** ensures conservative treatment of inserted materials and original manuscripts
- **Innovative „Soft Mode” Glass Plate System:** minimal effort required for guiding the glass plate
- **Latest CMOS sensors:** reaching of up to 36 million pixels
- **Professional Software:** including capturing&processing

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Account holder Bank Account number BLZ IBAN BIC  
Qidenus Technologies GmbH Wiener Neustädter SPARKASSE 02000015665 20267 AT242026702000015665 WINSATWNXXX

Source: Qidenus Technologies Unique Technology Features 2013

## Appendix 8: Qidenus Technologies –Case Study Arcanum Hungary

### Arcanum Hungary

Arcanum is one of the largest and most successful service digitization providers in Hungary.

Their market experience and commitment, as well as the quality of their equipments allows them to professionally conduct mass digitization projects and to develop long term digitization co-operations with various institutions from Hungary such as National Library of Hungary, the National Archives of Hungary, Library of Parliament, City Archives of Budapest and 52 museums.

### Choosing the best for the customers

Mr. Sandor Biszak, the CEO of Arcanum, knew from the start what equipments would help the company expand their digitization area, so he invested in 1 Robotic Book Scanner A3+ 300ppi and 2 Mastered Book Scanners A3+ 400ppi, and did not regret it for a second. ”Since acquiring the Qidenus equipments 3 years ago, in 2010, we scanned more than 2 million pages and gained important customers with rare collections such as the National Library, the National Archives and the City Archives of Budapest. The Qidenus book scanner was the machine they trusted with their valuable and irreplaceable materials. ” The main advantages of the Qidenus book scanners highlighted by Mr. Biszak and his valuable customers consist of the gentle, conservative treatment due to the optimal 80 degrees book opening angle, the perfect combination between high speed digitizing and very good image quality and the minimal effort of the operator due to the automatic page flattening and the motorized glass plate. ”There is also no need to have another equipment for the scanning of the hard covers and fold-outs as it is the case with the other digitizing devices , Qidenus covers 100% of the digitization process”, states Mr. Sandor Biszak

### Fast return of investment

For Arcanum, the quality of the book scanners offered for the different digitization projects was the best promotion, since the projects they were entrusted with, helped them achieve a fast return of investment and a very good reputation in the Hungarian digitization market. “The relationship with Qidenus did not end after the purchase of the 3 book scanners. We keep promoting their equipments here in Hungary, because we truly believe in the quality of their technology.

We have experienced it!” concludes the CEO of Arcanum Mr. Sandor Biszak.



For further information please contact:

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Floridusgasse 50/3

1210 Vienna, Austria

Tel: +4369911042884

Email:digitise@qidenus.com

**Arcanum Hungary**

Igmandi utca 40

1115 Budapest, Hungary

Tel:+36614810900

Email: info@arcanum.com

*Source: Qidenus Technologies Case Studies 2013*



# Appendix 9: Qidenus Technologies –Case Study Sivan Soluciones Mexico

## Sivan Mexico-Digitizing Service for a variety of Civil Registries across Mexico

Our partner Sivan Mexico is the main service provider for the large digitization program of the Civil Registries in the different Mexican states. Operating with two Qidenus book scanners acquired in 2012, a Robotic Book Scanner A3+ 300ppi and a large format Mastered Book Scan System A1 300ppi, Sivan manages to ensure a high speed, quality conservation of the valuable materials and data available in the Civil Registries: birth, death, marriage or divorce certificates as well as a wide range of legal documentation.



## Qidenus impresses Mexico-complete and effective digitizing solution

“We considered various solutions before starting this complex digitization process, but none of them was so suitable to our needs as the Qidenus equipments” states the Sivan Managing Director Mr. Salomon Orta.



“I was impressed by the technology behind the Qidenus book scanners, everything had been considered in constructing the scanner: a horizontally and vertically adjustable book cradle in an optimal 80 degrees created to adapt to all kind of books and bound material without causing any harm to the book and an automatically moving glass plate which eliminated the possible curvatures and helped increased the image quality. It was the dream of every digitization provider or librarian, 100% secure digitization” affirms Salomon.



## Qidenus Software-The Unexpected Bonus

“My only concern regarding the book scanner, was the software, since this feature would be fundamental in the quality of the digitization process, but I was about to be surprised in this aspect as well. Prepared to buy an additional software, as usually needed with a lot of book scanners, Qidenus surprised me pleasantly. Their software provided not only an easy, user friendly interface and a comprehensive management of the four digitization steps: job creation, scanning, processing and exporting, but also a variety of image processing algorithms which helped us achieve an excellent output” concludes the Managing Director of Sivan Mr. Salomon Orta.



The secure digitization of these documents provides the Mexican people with the first accurate statistical and informational electronic database of the socio-demographic developments from the last centuries .Qidenus is proud to be playing along with Sivan a main role in the creation of a new future through the power of wide access to information.

For further information please contact:

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**Sivan Soluciones**

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Mexico D.F

Mexico

Email: salomon.orta@sivan.com.mx

*Source: Qidenus Technologies Case Studies 2013*



# Appendix 10: Qidenus Technologies –Case Study University Library Heidelberg

## University Library Heidelberg - A living Symbol of German Culture

The Heidelberg University has been founded in the 13<sup>th</sup> century, being among the first higher education institutions in Germany. The Library currently consists of 3 million books and periodicals and 6.800 manuscripts, including cultural heritage materials and rare collections. The aim to increase the output of their digitization centre and the availability level of information for their almost 50000 active users, led them to Qidenus.



## The Qidenus Book Scanner suitable for fragile books

The Mastered Book Scan 3.0 A2 was acquired in February 2011. The director of the digitization centre, Dr. Thomas Wolf explains why the purchase decision fell on Qidenus: „The main advantages are the high level of automation and the book preserving scan method. The automation of the scan process, caused by the movement sensor, and the efficiently working image post processing define a highly coordinated workflow. The small opening degree of the book cradle and the smoothly moving glass plate give us the needed certainty because many fragile books are involved in our digitization projects.”



## Accomplished Goal of Productivity Increase

The Qidenus equipment was very easy to optimally integrate in the library’s digitization processes. Further information is provided by Dr. Wolf, director of the digitization centre: „After a very short start time the machine was ready for production. Then it took 2 weeks of testing the workflow. Afterwards, we started the production with one operator. After three months we instructed three other operators and started the working shifts. At the moment we have four operators working with the Qidenus book scanner, two of them working in production and two in charge of quality control. They are working in two shifts per day”.



„Since the acquisition of the Qidenus book scanner the production of our digitization centre increased of approximately 30 percent” concludes Dr. Wolf.

For further information please contact:



### Qidenus Technologies GmbH

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Email: digitise @qidenus.com

### University Library Heidelberg

Plöck 107-109

Tel: +49 6221542798

69047 Heidelberg

Germany

Email: wolf@ub.uni-heidelberg.de

Source: *Qidenus Technologies Case Studies 2013*

# Appendix 11: Article about Qidenus in the Wired Magazine UK

Sofie Qidenus uses robots to build digital libraries. "I knew nothing about robotics when I started, but I felt that there would be a huge demand for book digitisation," the Austrian entrepreneur (right) says. Her robot scanners have helped to digitise 80 per cent of all European national-library books. Her next chapter: the ScanGuru, a book-scanner that allows home users to turn books into ebooks.

Vienna-based Qidenus founded her company in June 2004. Her first design was a robotic finger to flip sheet-music pages so performing musicians could keep their hands on their instruments. "Turning pages is the major bottleneck for book digitisation," says Qidenus, 30. "So we started building a robot to make ebooks." Qidenus Technology now sells a dozen models - shown below is the RBS Full, which costs from €70,000 (£50,000). The book rests in a cradle and the glass "V" descends to flatten the pages, which are photographed by two cameras and digitised. The "V" then ascends, and the robot finger turns the page. It can digitise up to 3,000 pages per hour at 500dpi resolution.

Qidenus counts the Google Book Project, the Library of Alexandria in Egypt and several national libraries in Europe among its clients, and it has received €1 million from Austrian investors. The next step is to bring the technology to the masses. "The ScanGuru will be smart, but very simple," says Qidenus. "We want people to use it at home." [MV qidenus.com](http://www.qidenus.com)

**Tablet extra!**  
Download the wired app to watch the book scanner in action

**A Viennese page-turner**

Bookworms rejoice! You no longer have to be a national institution to create your own custom e-library

STREET



- A camera on the right captures the left-hand page; the left camera photographs the right
- A sensor modifies the finger pressure for various book types and paper qualities

0 2 3

Source: Article downloaded from the website: <http://www.qidenus.com/press/>

## Appendix 12: Article about Qidenus in „Der Standard“

Gründerin Sofie Qidenus: Mit bionischem Finger zum Erfolg  
Alena Schmuck, 25. März 2013, 10:04



Foto: silvia gattin  
Sofie Qidenus

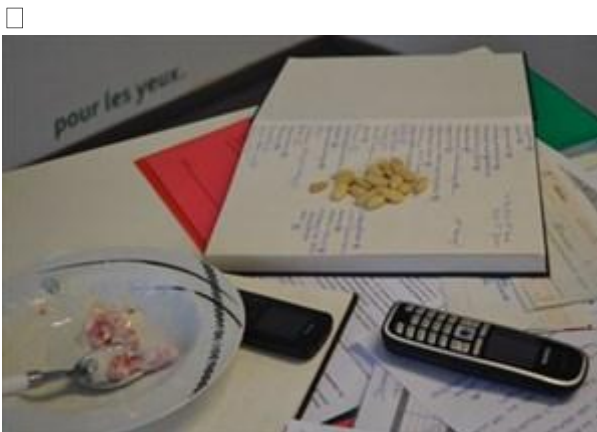


Foto: alena schmuck  
Stressreduktion durch Technikreduktion

## **Die 32-jährige führt seit fast einem Jahrzehnt die Qidenus Technologies GmbH, die automatisierte Seitenwender für Notenständer und Buch-Scanner entwickelt**

"Die meisten, die mich privat kennen lernen, würden nie glauben, dass ich eine Firma leite", sagt Sofie Qidenus. Das sei aber ok, meint die 32-jährige Gründerin und Geschäftsführerin der Qidenus Technologies GmbH. Denn in ihrer Freizeit spricht sie nur selten über ihren Job. Nach fast einem Jahrzehnt im Geschäft scheint Qidenus für sich herausgefunden zu haben, wie man die Balance zwischen Beruf und Privatleben aufrecht erhält. Zum Beispiel, indem sie statt einem Smartphone fast schon altertümlich anmutende GSM-Handys verwendet: "Weil sie keine E-Mails empfangen können."

MEHR ZUM THEMA

- Studium:Donau-Uni: Studienführer jetzt anfordern
- Euro:mPAY24 - Die Online-Zahlungslösung
- Geld:Bank Austria - Partner in allen Geldfragen
- Werbung

Trotzdem kann es auch bei Qidenus stressig zugehen. "Bei uns ist gerade ein bisschen Ausnahmezustand", verweist die Unternehmerin auf die Vorbereitungen für die CeBit, die Anfang März in Hannover stattfand, und die bei unserem Interview auf Hochtouren liefen. Als sie vom neuesten Qidenus Produkt, dem robotischen Buchscanner Smart Book Scan erzählt, der auf der CeBit präsentiert wurde, schlägt ihre Stimmung um. "Er ist super. Wir haben uns bisher mehr auf Großkunden, wie die Nationalbibliothek oder die Bibliothek von Alexandria konzentriert, aber der Smart Book Scan ist für Normalverbraucher."

### **Chefsalat**

Ihr momentaner Arbeitsrhythmus mit 15-Stunden-Tag sei für die Unternehmerin, zum Glück, kein Dauerzustand: "So etwas macht man vielleicht die ersten drei Jahre als Gründer, aber dann kommt man drauf, dass das weder funktioniert noch gesund ist." Gesundheit und Work-Life Balance scheinen bei Qidenus groß geschrieben zu werden, wie auch Fotos und Urkunden vom Wien Marathon, die die Wohnküche des Büros zieren, beweisen.

"Wir haben ein paar leidenschaftliche Läufer im Team. Das war auch der Grund, warum wir uns 2011 hier neben der Alten Donau im 22. Bezirk angesiedelt haben. Es ist perfekt zum Laufen." Der Hang zum gesunden Leben zeigt sich an Qidenus' Mittagessen – ein Salat aus Gemüse, Joghurt und Nüssen. Ausgewogen wirkt auch die Unternehmenskultur. Ihre Mitarbeiter, die größtenteils in ihren Zwanzigern sind und immer wieder in die Küche kommen um sich Essen aufzuwärmen, mitzureden oder vom Salat ihrer Chefin zu kosten sieht Qidenus sowieso als "Mitgründer." Der Startschuss für Qidenus erfolgte vor zehn Jahren. Die damals 21-jährige WU-Studentin konnte bereits auf zwei Unternehmensgründungen zurückblicken: ein "Junior Enterprise," das über ein Schulprojekt entstand und über das sie Malkurse für Senioren anbot; aber auch der erste schulübergreifende Ball in Wien, der Wiener Schulball – eine Marke, die sie später verkaufte. Ein Professor vom Institut für Entrepreneurship und Innovation stellte die umtriebige Studentin dem Erfinder Alfred Jakes vor, der Hilfe für die Vermarktung seines automatischen Notenblattwenders suchte. Die geschäftstüchtige junge Frau nahm die Herausforderung an, erzählte ihrem Umfeld zunächst aber nichts davon. "Ungefähr ein Jahr lang hab ich es nur mein 'Projektchen' genannt. Ich war selbst skeptisch. Eine 21-Jährige, die eine Robotikfirma startet – das ist schon ein bisschen verrückt. Ich hatte anfangs keine Ahnung von der Technologie."

### **Vom "Projektchen" zum KMU**

Das Projektchen wurde zum Projekt. Qidenus unterbrach ihr Studium, um sich ganz der Entwicklung eines Geschäftsmodells für Jakes später patentierten "bionischen Finger" widmen zu können, der inspiriert vom menschlichen Zeigefinger Seiten automatisch umblättert. Der Businessplan wurde zum Thema ihrer Masterarbeit. Nachdem Fördergelder von der Forschungsförderungsgesellschaft und ein Investment vom ehemaligen Konsum-Nachlassverwalter Hansjörg Tenng gesichert werden konnten, wurde aus der 2004 gegründeten Sofie Qidenus KEG, im Jahr 2005 die Qidenus Technologies GmbH. Der ungewöhnliche Nachname der Geschäftsführerin wird seither in leichter Abwandlung als Markenname verwendet.

2006 brachte das Startup sein erstes Produkt, einen über Fußpedal betätigten Notenblattwender der QiVinci Serie, auf den Markt. Das Patent des bionischen Fingers

wurde auf weitere Technologien angewandt: QiCare, ein über Pedal oder Stimme bedienbarer Seitenwender, der körperlich behinderten Menschen die Lektüre von Büchern und Zeitschriften erleichtert, und die QiScan Buchscanner, die mittlerweile den Kern der Forschungs- und Entwicklungsabteilung bilden. Jetzt will Qidenus mit seinen in Österreich entwickelten und hergestellten Produkten den privaten Markt für Buchdigitalisierung erschließen.

Mittlerweile ist das Unternehmen ein kleiner Betrieb mit 18 Mitarbeitern, einem Umsatz von rund 2,1 Millionen Euro und 90.000 Euro Profit. "Wachstum aus dem eigenen Cashflow heraus zu finanzieren bedeutet permanentes Jonglieren", weiß die Geschäftsführerin. Auch die Entscheidungsfindung ist bei insgesamt 16 Gesellschaftern (Qidenus hält 33%, Jakes 10%) kein Leichtes. "Es gab harte Zeiten, da hatten wir kein Geld am Konto und mussten Leute entlassen oder sie bitten, ohne Gehalt weiter zu arbeiten. Ich hab Glück gehabt, dass ich mich auf mein Team verlassen konnte", so Qidenus. Einer der Mitarbeiter schaltet sich ins Gespräch ein. Zu dieser Zeit habe die Chefin eine gute Idee gehabt: "Das Wort 'Problem' durch 'Spaß' zu ersetzen. Seitdem haben wir mehr Spaß denn je." (Alena Schmuck, derStandard.at und inventures.eu, 25.03.2013)

**Sofie Qidenus (32)** ist Gründerin und Geschäftsführerin der Qidenus Technologies GmbH. Mit 21 begann sie am Geschäftsmodell für den vom Erfinder Alfred Jakes entwickelten und später patentierten "bionischen Finger" zu arbeiten. Dieser wurde ursprünglich in einem automatischen Notenblattwender eingesetzt. Die 2005 gegründete GmbH hat sich mittlerweile auf die Entwicklung und Produktion von innovativen automatisierten Buchscannern spezialisiert. Dieser Beitrag ist ein Text einer Serie aus Porträts über Startups in Kooperation mit inventures.eu. Die Langversion des Artikels finden Sie hier.

Links:

Qidenus

Startup: Mediziner Jama Nateqi entwickelt "Google für Ärzte"

<http://derstandard.at/1363705608245/Gruenderin-Sofie-Qidenus-Mit-bionischem-Finger-zum-Erfolg>

*Source: Article downloaded from the website <http://www.qidenus.com/press/>*